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ABSTRACT

This document describes the objectives, development and evaluation of the Syracuse Responsive Care Program. The Responsive Care Program was designed to facilitate the development of children's social and cognitive repertoires, and was first implemented at Syracuse University with preschool children. Assumptions are that optimal learning is likely to occur when (1) a child's basic physical needs are met; (2) the child has continued access to a rich environment which provides possibilities for experiences the child can assimilate; (3) the child is free to determine the nature of his/her involvement; (4) adults provide symbolic feedback directly and through modeling. Described are the program objectives, accomplishments to date, development plan (including program products and materials developed by Syracuse University and Central Midwestern Regional Educational Laboratory (CEMREL], evaluation plan (including instruments designed by CEMREL to evaluate the program), dissemination plans, staffing plan, management plan, and budget. In addition the vitas of those responsible for the program are included. (Author/MS)

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SYRACUSE RESPONSIVE CARE PROGRAM
COOPERATIVE DEVELOPMENT PROGRAM
April 18, 1973

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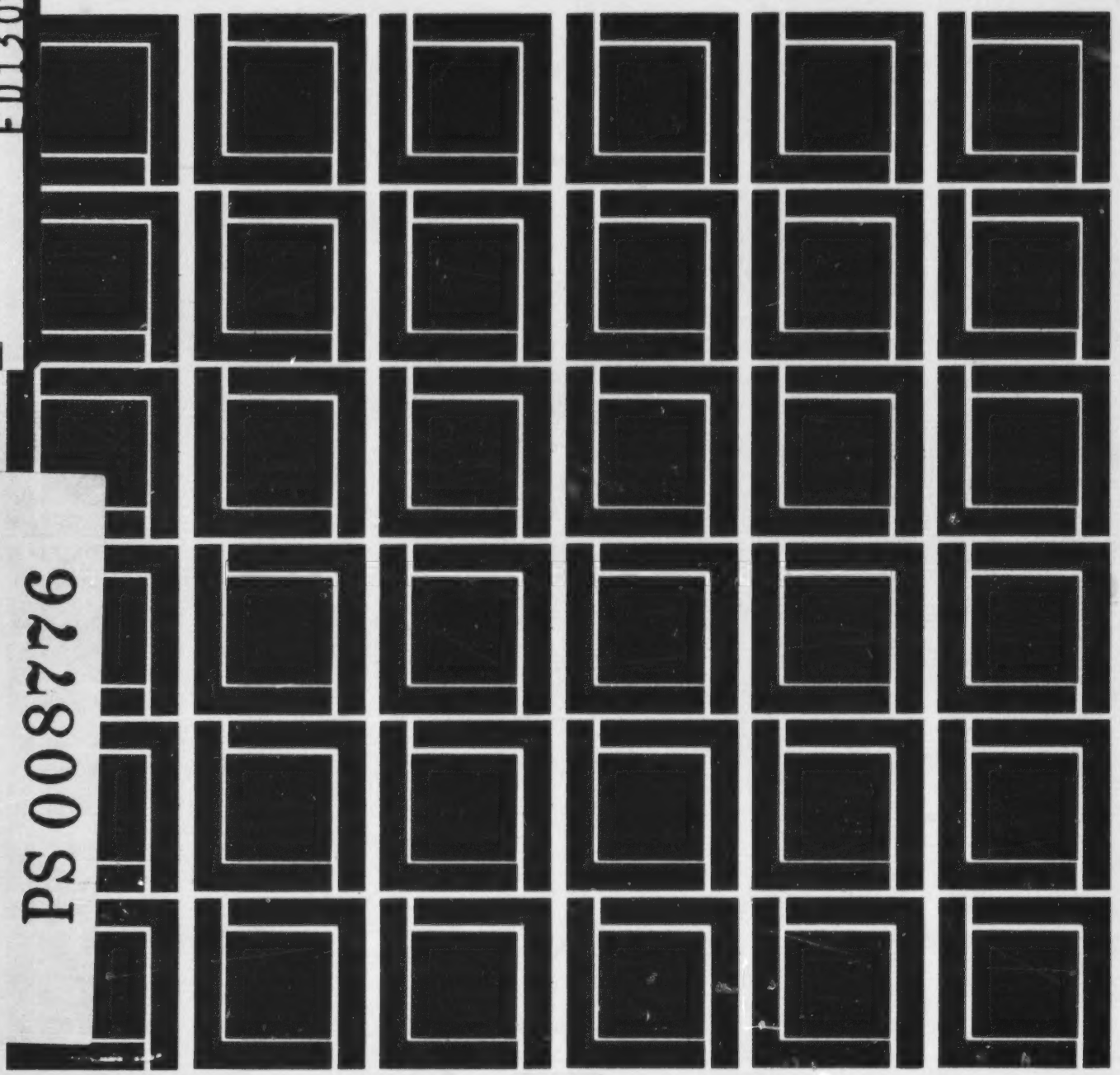

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FORM 1-A

Summary Data Sheet

Name and Location of University	Name and Director of R&D Center (where applicable)
CEMREL, Inc.	Wade M. Robinson
10646 St. Charles Rock Road	President
St. Ann, Missouri 63074	
Title of Program:	**Staff Member in Charge:**
Syracuse Responsive Care Program	Thomas J. Johnson
9342 Dielman Industrial Drive	Vice President, Research,
Olivette, Missouri 63132	Development, and Evaluation

Original Start and Proposed End Dates of Program: December 1970-September 1975

Costs	Basic OE/NIE Contract	Other Federal	Non-Federal	University Cost Sharing	Total
Investment thru FY 71	100,000	----	----	----	100,000
Investment thru FY 72	120,000	----	----	----	120,000
Investment thru FY 73	246,138	----	----	----	246,138
Projected FY 74-76 Costs	559,227	----	----	----	559,227
Projected FY 74 Costs	318,816	----	----	----	318,816
Projected FY 75 Cost	240,411	----	----	----	240,411
Projected FY 76 Cost	----	----	----	----	----

Fiscal years refers to fiscal year for program, i.e., December 1 through November 30.

FORM 1-B

PROGRAM RESUME

Institution: CEMREL, Inc. Date Prepared: April 18, 1973

Program Title: Syracuse Responsive Care Program

Original Start and Proposed End Dates of Program: December 1970 through September 1975

Staff Member in Charge: Dr. Thomas J. Johnson

Resume:

Problem and Objectives

One of the major problems confronting the development of promising experimental early childhood programs concerns program implementation and maintenance in settings distant from the development site. Many early childhood programs have experienced the frustration of developing and testing successful programs under their personal supervision only to find completely different sets of difficulties when installing their programs elsewhere. Often the initial training procedures prove to be less effective at the new sites than at the development sites.

High quality preschool programs need to be developed and characterized well enough to be replicated by local school districts, churches, or community groups; evaluation data is required concerning program outcomes and costs to facilitate the revision of program components and attain program objectives; and diffusion strategies for these programs are needed to provide a basis for the future diffusion of other programs as well.

The major focus of the Cooperative Development Program is to assist Syracuse-based researchers in the final development and field evaluation of their preschool program.

Program's Accomplishments to Date

The accomplishments of the Syracuse staff include the development and documentation of the operational characteristics of the Responsive Care Model and a series of research reports focusing primarily on the issues surrounding the observation and analysis of interactions within the Responsive Care Model.

The role of the Cooperative Development Program began in the summer of 1972 and has focused on the preparations for the field test and evaluation of the program.

Over the past three years research and development of the "responsive care" approach to child care and early childhood education has been under way at Syracuse University by Dr. Margaret Lay and associates. The major emphasis of this program plan is on the final development and evaluation activities of the Responsive Care model covering the 1973-75 time period. The objectives of

these activities will be: (1) To complete the development of program components to facilitate the transportability and replication of the Responsive Care Model; (2) To develop evaluation instruments appropriate to assessing the variation of outcomes which would be anticipated for participants in the Responsive Care Program; (3) To acquire a knowledge base regarding (a) specific consequences for individual children of their program encounters, and (b) the extent to which various types of program encounters, as empirically determined, occur in Responsive Care Program circumstances in contrast to other types of programs; (4) To document the efficacy of the design and instrumentation for evaluation of open programs; and (5) To disseminate the program and the documentation.

Development Plan

The development plan can best be characterized by a series of draft and cost revision cycles requiring the interaction of the Syracuse and CEMREL staffs. A product is first drafted by one of the staffs and then reviewed by the other staff. When a prototype is completed it is then tested in a field situation. Based on that test, further revisions may be specified as a joint CEMREL/Syracuse committee reviews the product. This revision process continues until both staffs are satisfied with the product.

Evaluation Plan

The program can be considered as involving three different sets of program objectives: (a) a physical design and materials set, (b) a teacher training set, and (c) a set of learning objectives for the children enrolled in the program. Six different evaluation issues will be addressed based on these program objectives. These questions include (1) efficacy of initial training, (2) degree of implementation of "desired" program, (3) "actual" program implemented, (4) efficacy of program components--primary objectives, (5) efficacy of program components--content related, and (6) efficacy of program components--process related. Eight instruments will be used in this assessment. A series of multivariate regression analyses will be performed to fit the various parameters or derivatives of these parameters to fit a general causal model for each of the major outcome variables.

Dissemination Plans

Commercial publication will be sought for the program materials and training manuals if the results of evaluation justify this. CEMREL field testing will likely provide an indication of the market for the manuals. With this information, CEMREL can approach publishers with a request for proposals and can proceed with final contract negotiations.

A. STATEMENT OF PROBLEM AND PROGRAM OBJECTIVES

Introduction

Preschool education is more and more become an expected part of the United States education system. For example, California is extending schooling down to four-year-olds, and many Southeastern states are beginning kindergarten level programs. While there have been several preschool programs (Weikart's Perry School Project, the Bereiter-Engelmann Preschool Program) that have demonstrated the ability to effect cognitive and affective outcomes in preschool children (Beller, 1973), few of these programs, with the exception of those commercially available, are sufficiently developed and characterized to permit dissemination to sites wishing to install programs immediately.

One of the major problems confronting the development of promising experimental early childhood programs concerns program implementation and maintenance in settings distant from the development site. Many early childhood programs have experienced the frustration of developing and testing successful programs under their personal supervision only to find completely different sets of difficulties when installing their programs elsewhere. Often the initial training procedures prove to be less effective at the new sites than at the development sites, in part because the new teacher trainees are not as personally committed to the program as the original development group. Sometimes the behavior of the teacher changes over the year as emergent problems arise and the teacher attempts solutions

with little immediate help available from program personnel. Frequently, the constraints of the local educational system interfere with the plans of the program. Other types of implementation problems can occur as some teachers adhere closely to the program guidelines while others deviate widely using the program components selectively or adhering to the program guidelines only with outsiders are present.

High quality preschool programs need to be developed and characterized well enough to be replicated by local school districts, churches, or community groups; evaluation data is required concerning program outcomes and costs to facilitate the revision of program components and attain program objectives; and diffusion strategies for these programs are needed to provide a basis for the future diffusion of other programs as well.

By making programs available to local communities as soon as they are fully tested, described, and replicated, the immediate need for quality preschool programs can be partially met.

At a minimum, programs require the following elements before they can be installed and tested:

1. Instructional content, materials, and procedures.
2. Procedures for training the staff of administrators, teachers, paraprofessionals, and others to implement the program.
3. Management guidelines, including such aspects as classroom size, adult-child ratio, physical arrangements, and scheduling.

4. Delivery systems to effectively transmit the program component to the children.

5. Appropriate and valid assessment instrumentation.

The major focus of the Cooperative Development Program is to assist university-based researchers in the final development and field evaluation of promising preschool programs.

The Program Objectives

This Basic Program Plan addresses itself to the major development and evaluation activities that remain to be accomplished to complete all work on the Syracuse Responsive Care Program, as recommended by the National Institute of Education Panel F review group in November of 1972. It should be pointed out that the research and development work upon which this program is based has already been funded and accomplished over the past four years, and the initial phases of the final development and evaluation effort has been funded through November 30, 1973.

Over the past three years research and development of the "responsive care" approach to child care and early childhood education has been under way at Syracuse University by Dr. Margaret Lay and associates. The major emphasis of this program plan is on the final development and evaluation activities of the Responsive Care model covering the 1973-75 time period. The objectives of these activities will be:

1. To complete the development of program components to facilitate the transportability and replication of the Responsive Care model.

2. To develop evaluation instruments appropriate to assessing

the variation of outcomes which would be anticipated for participants in the Responsive Care Program.

3. To acquire a knowledge base regarding (a) specific consequences for individual children of their program encounters and (b) the extent to which various types of program encounters, as empirically determined, occur in Responsive Care Program circumstances in contrast to other types of programs.
4. To document the efficacy of the design and instrumentation for evaluation of open programs.
5. To disseminate the program and the documentation.

Beller (1973) in a chapter in the *Second Handbook of Research on Teaching*, which discusses the influence of organized programs on early child education, summarized his review by expressing a preference for an evaluation question such as "Who benefits from what?" This is indeed a critical question and is one which has been increasingly addressed in the many program evaluation efforts conducted across the last decade. An equally insistent question is to determine what the program experiences of children really are.

Answering the question of the effects of differing program experiences for children of specific characteristics within the context of the evaluation of Responsive Care Program is the general problem the proposed activities will address.

The question of "who benefits from what" is a difficult question to answer in evaluating highly-focused programs, even though these programs

do not provide much heterogeneity of experience for participants. The question becomes even more complicated in evaluating the effects of "open" programs, wherein there is great diversity both in what is available to be experienced in which there is considerable variation in what is actually experienced by participants.

Although interest in "open" or "informal" approaches to education is currently extensive, and has been, under other nomenclature, persistent, and recurring, there are at least two major reasons why these approaches have been more faddish and short-lived than accepted and commonplace despite their appeal. The first has been the degree of difficulty adults encounter in trying to arrange "openness" in programming for groups of children. The Responsive Care model was specifically designed to increase the ease with which adults can arrange options for involvement and learning for children.

The second has been the problem of determining whether there are positive outcomes for children of participation in open programs in comparison with other education approaches. This problem has been a persistent one and concerns not only a value issue--which outcomes are viewed as desireable--but a measurement and theoretical/conceptual issue as well. How one conceptualizes the process of growth and development, how change in growth and development over time can be documented, and how it varies differentially as a function of participation in different programs are continuing concerns.

The efforts of Bussis and Chittenden (1970) in providing evaluation techniques for the Education Development Center Follow Through model

have been extremely thought provoking, but, as yet, little methodology has been provided which satisfactorily resolves either the problem of characterizing open programs or identifying those particular outcomes most uniquely obtained under "informal" approaches to early education.

Promising efforts to directly characterize features of openness in programs include those reported by Traub et al. (1972), Walberg and Thomas (1972), Dopyera and Lay (1973), Lay (1972), and Brandt (1972). The approaches reported by Soar (1970) and Dopyer and Lay (1972) of using regressing analysis techniques with observational data to examine variance in what is actually achieved by children within programs provide particularly worthy models for the assessment of open education.

Research done to date in determining the effects of program experiences on young children might be tentatively summarized as follows:

1. Familial influences on achievement are greater than preschool program influences (Welkart et al., 1970).
2. More specifically-focused programs may have more immediate success in producing short-term gains in the areas stressed, but decline is predictable (DiLorenzo, 1968; Classen, Spear, and Tomaro, 1969; Karnes, 1969; Welkart, 1971).
3. Programs with different emphases effect different areas of functioning in children (Miller, 1971; Bissell, 1971; Belier, Zimmie, and Aiken, 1971).
4. The earlier the start and the longer the involvement in a program the greater the likelihood of more enduring effects (Belier, 1972; Bronfenbrenner, 1973).

5. There tend to be differences in program effects according to sex (Beller, 1972; Weikart et al., 1970).
6. Some effects of programs may not be discernable until some later point of consolidation and more rapid change (Siegel and McBane, 1969; Weikart, 1971).

Over the last decade the models used for evaluating the effects of preschool programs have become increasingly complex. From the global comparisons of the early sixties between program and no program (Cicirelli et al., 1969) to a special model versus tradition (Vande Riet et al., 1966, 1969; Bereiter and Engelmann, 1966) and/or multi-model comparisons (Karnes, 1969; Miller, Dyer et al., 1971; Bissell, 1971) to non-program specific dimension comparisons (Soar, 1970; Dopyer, 1969), program evaluation models have become much more capable of addressing the more difficult questions of program influences on participants. As designs increase in sophistication and sensitivity, more and more of value can be learned about the effects of differing kinds of program experiences on children of particular characteristics or previous history.

While, as indicated in the previous paragraph, there are some more or less adequate design models for evaluation of preschool programs, there is general consensus that available instrumentation for these efforts is woefully inadequate to the task. Even the most cursory examination of documents purporting to communicate about outcome measurement devices for young children (Educational Testing Service, 1968; Boger and Knight, 1969; Zimiles, 1969, 1971; Hoepfner, Stern, and Nummedal, 1971) leads to the conclusion that, other than history of use and the associated possibility of

comparable data, there aren't particularly convincing reasons to recommend any of the existent instruments as adequate for summative evaluation. The lack of generalizability of findings to other situations is one of the major concerns. Certainly measurement devices to index expansion of behavioral repertoire within a broad range of possible arenas, as needed for this study, are not available from commercial publishers. While relying on some standardly used measures is appropriate, it will also be necessary to develop measures for assessing the expansion of repertoire hypothesized to result from the diverse set of program encounters in open settings.

To summarize, many of the problems of establishing and maintaining open programs have been resolved, or to a large extent resolved, lessened, or ameliorated through research and development on the structure of a responsive care program. The Syracuse/CEMREL staff will be ready to pilot training procedures and test implementation strategies away from the initial site during the 1973-74 year. It is essential that the evaluation designed for this effort match the nature of the program design by being sensitive to the differences of child encounters within classes (as well as between classes) and in the diversity of outcomes likely to be produced in participating children. The evaluation design proposed in this program plan will serve both as an effective means to specifically examine the differential outcomes of participation in the Responsive Care and comparison programs and as a possible model of procedures for evaluating open programs more generally.

B. ACCOMPLISHMENTS TO DATE

Efforts of the Syracuse Staff

A primary concern of the Syracuse staff has been the observational documentation of children's and adults' program experiences under the Responsive Care arrangements. During the first two years of operation, extensive observations of 40 children's program encounters were obtained on a systematic sampling bases. A mean of 230 minutes of sampled (one minute) observations were collected for each child across eight months between October 1970 and May 1971. The document *The Responsive Care Program: A Program Manual and Report of Implementation* (Lay, 1972) reported data on the increasing verbal interactions, increasing positive interactions, and decreasing negative interactions which were observed across the program year. That the program accommodated individual differences was well illustrated by the variation found among the participating children in the proportion of total observations in which they were in particular program locations, in which they were using given equipment and materials, in which they were encountering given peers and adults.

During the second year of the program, 60 minutes of minute-long sampled observations were obtained for the same children and some added younger enrollees during the latter half of the year. Although base rates remained quite stable across the two years for the proportion of total observations for each type of encounter for the total group,

there were developmental changes within individual data compilations. For example, children with longer tenure in the program spent significantly less time in the active area and more time in the task area.

Data obtained on adult interactions with children indicated a high rate of contact and nearly all interactions were in one-to-one (or two) situations. It was also found that there was markedly lower incidence of adults' negatively sanctioning children's behavior in the Responsive Care Program than that which had been documented in other early childhood program settings.

The procedures for documenting individual children's program encounters and the supporting technology for processing and analyzing the data were well developed during the 1970-1972 time periods. The potential for using this type of data as measures for characterizing programs and/or determining program effects has been well established in this prior work. The following reports were based on data thus obtained:

> *Lay, M.Z. The Responsive Care Model: A Program Manual and Report of Implementation.* 161 pp. Syracuse, New York: S.U. Early Childhood Education Center, 1972.
>
> This report provided very detailed specification of the rationale, theoretical basis, objectives, spatial arrangements, equipment and materials, staffing patterns and responsibilities of the Syracuse implementation of the responsive care model. A formal report of the sample, procedure, instrumentation, and results of the extensive observational study conducted during the 1970-71 year is included. This report has served as the basis for all further development and research activity.

Lay, M.Z. and Meyer, W.J. The Effects of Early Day Care Experience on Subsequent Observed Program Behaviors. 59 pp. Syracuse, New York: S.U. Early Childhood Education Center, 1971.

The document reports differences in observations between 20 children who had been enrolled in infant and toddler programs and 20 matches who had no prior day care experience before enrollment in the responsive care setting. Children with prior experience were found to differ in their observed location in the program setting and extent and nature of peer interactions. The binary observational data collected across an eight month period were employed as the dependent measures which were found to discriminate between these groups although differences on test data (ITPA, Stanford-Binet) were negligible.

Lay, M.Z. and Meyer, W.J. Comparisons of Children with Early Day Care Experiences and Children Without Previous Formal Experience. 18 pp. Syracuse, New York: S.U. Early Childhood Education Center, 1972.

Observational data for the same 40 children (Lay and Meyer, 1971 - see above) were obtained during the period from February through May 1972. The previously observed differences between the two groups were no longer present. After a year and a half in the responsive care program children with infant and toddler intervention programs were not having significantly different program encounters in the responsive care program setting than their less (program) experienced peers.

Within the data set for each of the above reports there were marked variations in what within the commonly available set of potential encounters any given child actually did encounter. Since a program facet which a particular child never or rarely encountered has little potential for influencing his development of learning, the efficacy of determining the actual as well as the potential program encounters of a child seems in order. From these efforts were derived the perspectives from whence come proposals for the evaluation strategies of this program

During the past two years many documents have been produced by the Syracuse staff in preparation for the replication activities of the upcoming years. These reports included:

Arrangements and procedures for initiating a Responsive Care Model. 1972.

Criteria for selection of equipment and materials for the Responsive Care and other early childhood programs. 1972.

Lists of equipment and materials for Responsive Care Programs. 1972.

Description of staff responsibilities and decision-making procedures in the Responsive Care Program. 1972.

Plans for working with directors of Responsive Care replication centers. 1973.

Staff training plans for the Responsive Care Program implementation. 1973.

Child Repertoire Assessment Record. 1972.

Teacher's Guide for use of Child Repertoire Assessment Record. 1972.

Examining adults' actual and potential responsiveness of children: Implications for staffing Responsive Care Programs. 1972.

Slide show narrative. 1972.

Plan of research for experimental variation in the Responsive Care Program. 1972.

A time all his own: The individual session of the Responsive Care Program. 1972.

The nature of parent involvement in the Responsive Care Program. 1973.

Efforts of the Cooperative Development Program Staff

Since the summer of 1972 staff members from CEMREL have met frequently with the program development staff of Syracuse, often at Syracuse. These meetings gave CEMREL staff members an opportunity to observe the program in operation and to share reactions to products mentioned above that were drafted at Syracuse, as well as products drafted at CEMREL. Products drafted by CEMREL and discussed have included a set of objectives that could be used for the training of Syracuse teachers, a paper defining the nature of responsive teaching, a brochure to explain the program to potential Responsive Care pilot sites, and other specification of scopes of work have also been discussed at the meetings.

During the early months of 1973, the Cooperative Development Program engaged in the location of several sites for the pilot test of the Syracuse Responsive Care Program. Initial contacts were made with approximately twenty sites explaining the purpose of the pilot test and to elicit any interest in site participation. After initial interest was shown, questionnaires were mailed to the interested sites, gathering information on such items as staffing patterns, number and age of children, space arrangements, materials available, and problems anticipated should the center decide to pilot the Responsive Care Program. While the questionnaires were being returned, an information-sharing session was held at CEMREL in which two members of the Syracuse Responsive Care staff came to St. Louis and talked to approximately 40 people from schools and day care

centers in St. Louis interested in participating in pilot test. After the information-sharing session, visits were made by Syracuse staff and by the CEMREL staff to each of these sites. A CEMREL staff member also went to Syracuse to visit sites near Syracuse interested in piloting the model. Decisions should be made in April or May on which centers will be selected as pilot sites.

An initial draft of the evaluation design was made by the Cooperative Development Program staff and forwarded to Syracuse University where the Responsive personnel are currently reacting to and making suggestions for revisions.

Work was begun on a degree of implementation instrument, which will be used in the Syracuse pilot test. The major portion of this instrument is currently in draft form and is currently being examined and critiqued by the Syracuse staff.

Work was begun at the Cooperative Development Program examining the CEMREL test classification system to find existing instruments and subtest instruments which could be used to assess the attitude and social-emotional development of the children in the Syracuse Responsive Care pilot test.

Work has begun on the pre-posttest to measure the broadened repertoires of the children in the Responsive Care Program. This work focused on (a) describing the theoretical rationale underlying such an instrument and (b) examining existing behavioral classification systems.

C. DEVELOPMENT PLAN

Background

Syracuse University in 1970 provided the physical setting in which the initial development and research for the Responsive Care Program has been accomplished. Groups of 35 to 50 children, predominantly low income inner-city children from age three through six, have been enrolled in the program. Some of the enrollees (at present the total group) have received prior day care as infants and toddlers in a separate Syracuse research-based operation.

Extensive descriptions have been prepared during the past three years of the conditions for children's learning which are created by the Responsive Care arrangements. These may be briefly summarized as:

1. There is space for active play, for expressive activity, for quiet reflective work, for invitational activities, and for instructional sessions for individual children.
2. The structure of the program is organized in spatial features rather than temporal, i.e., expectations for children's behavior is related to where they are rather than to a time schedule.
3. Most instruction occurs when children are immersed in doing something, where the adult, with sensitivity to what the child is doing, extends the child's experience through comment, suggestion, explanation, or material manipulation.

4. There is a sufficient number of different adults and a systematic deployment of the adults to provide a rich variety of experience for the children in three major areas and through the provision of responsive teaching, invitational activities, and individual instruction sessions.
5. There is a wide variety of materials and supplies that can help facilitate the child's development.
6. There are non-compulsory group activities such as stories, singing, field trips, cooking experience, dramatic activities.
7. Each child has an adult in the center who keeps special records on his behaviors, who plans for and carries out with him instructional activities to extend his repertoire.

In contrast to many other preschool programs, there is no specific set of behaviors or skills that all of the children are expected to acquire to a given level, or by a given time. A broadened repertoire, "learning" but not "particular learning," in a non-"channeled" environment is the manifest goal of the program. This stance is based on the fact that there is insufficient available knowledge of the "long-term" relationships between particular learners and specific stimulus conditions to justify a set of specific objectives for all learners; that, in fact, concerted focus on short-term achievement, however successfully brought about, may well create conditions which actually inhibit development of repertoire in other directions and which eventually bring about negative consequences.

Although teacher responsibilities are well defined in the program, the individual nature of the instructional methods encourages teachers to

develop and make use of their own particular abilities and styles of interaction. A variety of teacher interests and abilities, instead of a uniformity, is desirable in the program as it increases the child's opportunities for instruction interchanges with his environment.

The Responsive Care Program is designed to facilitate the development of children's social and cognitive repertoires. Based on the premise that the primary impetus for development is the child's active interchanges with his environment, the program provides a rich environment and maximizes learning through responsive instructional techniques.

Characterizing the Program

The Syracuse Responsive Care Program has several features which make it unique among preschool programs. The task of the CEMREL evaluation staff is to work with the development staff at Syracuse in helping to specify in measureable form the essential features of the program, and to design measurement instruments sensitive to them. After these instruments have been designed, developed, and tested, they will be administered during the pilot installation of the Syracuse Responsive Care Program to determine the degree to which the local sites were able to implement a true replication of the Syracuse Responsive Care Program.

1. Physical Setting--Is there space available for active play, for expressive activity, for quiet, reflective work, for invitational activities, and for instructional sessions for individual children?
2. Organizational Feature--Is the structure of the program spatial rather than temporal (i.e., are expectations for

children's behaviors related to where they are rather than to a time schedule)?

3. Responsive Teaching--Is most instruction carried out after children become immersed in doing something, where the teacher, with sensitivity to what the child is doing, extends the child's experience through comment, suggestion, explanation, or material manipulation?
4. Staffing Arrangements--Is there a sufficient number of adults to provide a rich variety of experiences for the children in the three major areas and through the revision of responsive teaching, invitational activities, and one-to-one teaching situations?
5. Materials and Supplies--Does the center provide a staff and children with a wide variety of materials and supplies that can help promote the child's emotional, social, physical, and intellectual growth?
6. Invitational Activities--Does the center offer non-compulsory activities, such as stories, songs, finger plays, field trips, cooking activities, and dramatic activities?
7. One-To-One Teaching--Does each child have an adult in the center who keeps special records on his behaviors, who plans for and carries out with him instructional activities to broaden his repertoire?

All of the above features and other ones are currently being defined operationally so that it may be determined how close to the Syracuse model various centers come.

Procedures for the Final Development of Responsive Care Program Products

During the remainder of the current year, and as planned for the next year, there will be several products developed jointly by the Syracuse and CEMREL staffs (see product list on pp. 23 and 24). Our typical development process consists of the five phases that follow.

In phase one, a draft version of the product is developed by either Syracuse or CEMREL developers. Syracuse, for example, is currently developing training materials, has written reports which form the basis for an administrator's manual, and has developed a draft version of the *Repertoire Assessment Record.* CEMREL, on the other hand, is involved in the development of several evaluation instruments and of the administrator's handbook.

The second phase of product development consists of review and recommendation activity in which CEMREL examines draft products made by Syracuse and Syracuse examines draft products made by CEMREL. By checking CEMREL drafts, Syracuse is able to correct misconceptions CEMREL has of the Responsive Care Program and is able to help assure that its program is well documented. CEMREL's review of Syracuse drafts helps make certain that those drafts communicate clearly to school and day care administrators and teachers, for CEMREL in the process of locating sites in which to pilot the program has become increasingly sensitive to the concerns and realities of day care personnel and programs.

The third phase of product development is the development of the prototype product. Usually the prototype product is developed by the original drafter of the product, although such is not always the case.

Obviously, the quality of the product is related to how thoughtfully Syracuse and CEMREL developers reacted during phase two.

Piloting the product is the fourth phase of the product's development. Usually, there is more than one data collection procedure used to learn about the effectiveness of the product and how it is received by its intended audience. For example, to assess the training materials we plan to develop a test to assess how well recipients of the training understand the program, to observe interactions in which those materials are being used, to interview teachers concerning the materials, and to assess the extent to which teachers implement the program.

Following the piloting of the materials and the concurrent and subsequent data collection, proposals are drafted by Syracuse and CEMREL staffs for further revisions of the materials. Those proposals are reviewed by a joint Syracuse/CEMREL review committee, and following their analysis, assignments and specifications are made for revisions of the materials. These revisions are subjected to further analysis, as the fourth and fifth phases of product development are repeated until both Syracuse and CEMREL staffs feel confident the materials accomplish their purposes, are internally consistent and communicative, and are logically consistent with the Syracuse program.

Anticipated Responsive Care Products

Responsive Care Teacher's Guide. A guide for Responsive Care teachers is in the process of development and will be completed in prototype version this spring. The guide will consist of pages and booklets that are to be read and placed in a looseleaf notebook during the course of

preservice and inservice training. It will introduce teachers to the principles behind the program and will explain responsive care spatial arrangements, methods of responsive instruction, and procedures for record keeping and invitational group activities. The guide will not only be used during training, but will be a reference during the year, as it will provide practical teaching suggestions and serve as a stimulus to help teachers generate their own responsive teaching ideas.

Responsive Care Inservice Training Packets. For inservice training purposes, the program developers are developing sets of packets and booklets to provide teachers with learning experiences to expand their skills in such areas as providing musical, dramatic, and movement activities, food-related experiences for children, and field trips. These materials are individualized in the sense that each teacher will select the booklets or packets on which to concentrate and will make his or her own choice on what means from those suggested will be used to master the objectives within the packet.

Repertoire Assessment Records. Each teacher will have special responsibilities for a subset of children within the program. Their responsibilities include providing individualized teaching for those children and communicating with their parents about their children's progress. A record keeping system is being developed to help teachers become more sensitive to the child's behavioral repertoire and provide responsive instruction that is appropriate to the child's behavioral repertoire.

The format of the record keeping system is a set of pages most of which will have a heading and subheadings and space below for the teacher

to write comments relevant to the headings. The headings and subheadings include such items as "takes a leader role in play," "demonstrates concern for others," "can control balance easily," "able to hold pencil in position for writing," "expresses joy," "expresses anger," "uses language to ask for information," "orders objects according to size or other dimensions," etc. Each notebook will pertain to one child and will have the following subsections: affective development, sound development, psychomotor development, intellectual development--cognitive processes, intellectual development--language, intellectual development--mathematics, and intellectual processes--reading/writing.

Responsive Care Administrator's Materials. Under the heading of administrator's materials are actually three documents, two of which are developed to provide the administrator who has an interest in the program with the kind of information he needs to help him make the decisions on whether or not to select the Responsive Care Program for his school or center. These documents consist of a brochure describing the program's underlying assumptions, the methods, the staffing arrangements, facilities needs, and costs involved and a slide-tape that provides similar information, but with accompanying pictures of the program in action.

The third document will be a booklet that provides in much more detail the kinds of information an administrator needs to start up and maintain the Responsive Care Program. Included in this booklet would be recommendations for recruitment, descriptions, staff rules and responsibilities, teacher training, and the parent involvement program, as well as a list of equipment considered necessary or desirable in a school or center that wishes to use the Responsive Care Program.

Responsive Care Teacher Trainer's Guide. A teacher trainer's guide will be developed either as a separate document or as a part of the administrator's manual to provide the local administrator or supervisor with an understanding of the philosophy, principles, and practices of the Responsive Care Program. The document will also provide a variety of suggestions for the training of staffs in centers that have chosen to implement the Responsive Care Program.

Evaluation Instruments. A number of evaluation instruments to be developed for the program are described in the section on evaluation.

Summary of Program Materials

Teacher's Manuals and Training Materials

Responsive Care Teacher's Guide

Responsive Care Inservice Training Packets (at least six packets)

Repertoire Assessment Records

Responsive Care Teacher Trainer's Guide

Materials for Administrators

Descriptive brochures

A slide-tape

A booklet providing detailed information about the program

Evaluation and Monitoring Materials

Test of Responsive Care Principles

Degree of Implementation Measure

Responsive Teaching Assessment Instrument

Record Keeping System on Materials Use

Repertoire Assessment Scale

Attitude Checklist

Computer Programs for Data Analysis

Reports

Report on site selection for pilot test

Report on reliability of program implementation instrument

Report on observation/feedback training sessions

Report on evaluation results, phase I

Final evaluation report (phases I and II)

D. EVALUATION PLAN

Rationale Underlying the Evaluation

The structure of an educational program at any age level is best conceived to be a particular configuration of identifiable elements designed to effect or regulate a specific set of educational, vocational, or developmental outcomes. The operating components or elements of the program can be conceived as a set of independent regulating variables which are mediated or maintained by the products (i.e., books, toys, guidelines, etc.) or the staff behaviors, or the systems which comprise them, and the objectives of the program theoretically provide the rationale underlying the component selection process.

"Program characterization" as used here refers to the complete set of activities required to describe this program structure. The completeness of any program characterization is primarily a function of the thoroughness and openness of the developer, the persistence of the evaluator, as well as the allocatable resources, and the importance of the decisions to be made concerning the program. Full program characterization requires careful, detailed specification of (a) the "major" and "minor" independent variables contained in each of the separable components of a program, (b) the multivariate set of outcomes each component is designed to effect, (c) a measurement system to determine the effects, and (d) the assumptive, logical, theoretical, or empirical rationale connecting (a) to (b) through (c). A fully characterized program evaluation

will require the use of more complex mathematical models, sampling designs, and statistical analyses to address the complex set of causal relationships than are currently being used.

The role of the evaluation staff in this process is that of gathering data to provide information to both a known and an unknown set of decision makers. A complicating factor is that this data must be collected against (a) an unknown set of evaluation criteria, and (b) an unknown set of alternatives. This obviously presents an impossible task for the conscientious evaluator to fulfill.

The most unbiased and efficient procedure for the evaluator to follow is to explicate the most general evaluation model to cover the program. This model would be one in which all of the "major" operating components of the program are identified, all of the "major" program objectives are related to these components, and all of the "major" performance criteria (test items, subscores, etc.) are tied to each set of these objectives and program components through a general "causal" model from which inferences could be derived about the total program, or about program subsets. The agreement of a hypothetical decision maker with the evaluator's definitions of "major" and "minor" would remain as a chronic problem, however.

These sets of known and unknown decision makers would include developers, consumers, and sponsors, as well as educational researchers and skeptics, who are interested in substantive and methodological issues. The evaluative criteria used by these groups are, generally, idiosyncratic in nature, based upon their own knowledge and experience and upon the

congruence of the product with some well established conceptual framework they employ, or the actual evaluation procedures used, and sometimes on the relevance of the data yielded to adjudge the program's adequacy.

Information Requirements in Evaluation

For each of these groups of decision makers, separate evaluation criteria are employed; hence, different types of evaluation information must be provided, and for each type of information for a given decision maker, there may be various methods of obtaining that information. The components or elements of a program that need to be specified in an adequate "minimum" general causal model and the function of each would include the following:

Program Component	Information Function
a. The program objectives	a. What outcomes the program has been designed to accomplish.
b. The major packageable or differentiable "products" or parts of the program conceived as sets of 1. independent process variables, and 2. independent content variables	b. What the discrete curricula and instructional treatments are within the program, and how they have been designed to produce, or deliver aggregated or differentiated sets of these objectives.
c. Child variables to be considered (if any)	c. Possible mediating factors in the efficacy of aggregated or differentiated (b) as a transfer mechanism for aggregated or differentiated (a).

d.	Teacher variables to be considered (if any)	d.	Possible mediating factors in the efficacy of aggregated or differentiated (b) as a transfer mechanism for aggregated or differentiated (a) and (c).
e.	Rationale or scheme for selecting and aggregating test items given before, during, and/or after the program to determine efficacy of the separable elements of (a), (b), (c), and (d).	e.	How the relationship between program objectives, program parts, and program outcomes are to be measured.

Additional information related to costs, teacher and administrator attitudes, training and supervision requirements, and parental and community attitudes, while not a part of the general causal model, may also need to be provided to make the complete set of information provided by the evaluator of general utility to the unknown set of decision makers. At a minimum, documentation on the assumptive, logical, or empirical relationship between the major elements should be provided.

A major problem in the evaluation of educational programs at any age level has been the difficulties involved in assessing the correspondence between three basic program components: (a), (b), and (e). Programs are usually implemented so rapidly that the actual "packageable" program components themselves are often introduced in an ad hoc fashion, or they are "rationally" tied into the program objectives and logic by an ex post facto procedure, or perhaps not tied in at all. Thus, if the evaluator employs a strong "experiment" type causal model, this may seem to be a form of casuists overkill. On the other hand, a major problem inherent in the analyses of much evaluation data is that in order for the analyses to be valid for making inferences about the effectiveness of the program, those

variables which influence the outcomes and which are not explicated and which are not a viable part of the program must be essentially uncorrelated with the explicated program features. Unfortunately, this criterion for analysis is impossible to meet in practice, and it poses a major problem for the evaluation of educational programs.

The key to appropriate program evaluation lies in the distinction between major and minor sources of variation in outcomes. If an evaluation model can be formulated so that the major program sources of the outcomes are represented, then any inferential errors in using the model (assuming appropriate measurements are available) will be minor. The best procedure that we can follow, at this time, is to use a reasonable set of criteria for variable inclusion. Several points with respect to these criteria are: (a) The number of constructs used in the evaluation model ought to be relatively small. (This is because it is difficult to evaluate the reasonableness of the results if the number of variables in the model is too large. However, the variables which are included should be broadly defined by aggregation of more minutely defined variables so that the variables used are more "general" and, hence, more "important" or "major.") (b) The variables should be defined in such a way that the correlations of unexplicated variables with the major program components minimized. This implies that the set of program components chosen for the evaluation model should be chosen so as to be most highly correlated with the proper outcomes. This will result in smaller specification errors than by using the opposite strategy. This strategy, it should be noted, is very dissimilar to some of those discussed in the literature. The main reason is

that the object of an evaluation should not be to account for a lot of variance in the outcomes, but to find out if the program and its discrete components are producing changes in the levels of the intended outcomes and how much. It should be pointed out that the degree of program implementation is a critical factor in determining the extent to which these major program components are operative during the evaluation effort.

The program components chosen for consideration in the model form a set of independent regulating variables which are mediated or maintained by the products which comprise them. In other words, attention to selected features of the staff training element of a program is seen as necessary, because certain aspects of the training, e.g., use of a responsive teacher's technique, mediate the operation of a set of one or more important regulating variables, e.g., teacher-pupil feedback, and this in turn affects individual achievement directly. These elements then provide the means to effect the levels of one or more of the individual outcomes desired. Any complete program evaluation would obviously require detailed specification of the regulating variables contained in all of the separable components of a program, as well as the multivariate set of outcomes each is designed to effect. Thus, program evaluation can be conceived as a more complex version of element or product evaluation, involving multi-variate sets of regulating variables (one block for each element or product), and multi-variate sets of outcome variables (one block for each element or product), and where each outcome is assumed, hypothesized, or previously observed to be causally related to one or more of the regulating variables of the set within a given block. The analysis

of evaluation data from such highly specified programs and the designs for obtaining the data have yet to be worked out in their entirety, but a minimal design is schematized in Figure 1.

Since major relationships between the separable objectives, the separable program elements and their embedded sets of independent variables, and the vectors of the matrix of dependent variables can be directly testable, the model will be considerably stronger than the simple non-specific program or no-program type of evaluation design often used. The use of even more complicated program evaluation models which include home related variables (H) and child variables (C) as terms in the model may be needed, to more adequately represent the complete set of events which might be causally related to a hypothetical set of outcomes of interest to program developers. Obviously, such models require far more careful evaluation planning, design, and analysis than most conceptions of program evaluation have previously considered, but they are certainly within reach of the present technology of evaluation.

Evaluation of Training Elements Within Programs

In many programs it is necessary to provide instruction to the personnel who will work with elements of programs, and a formal training program or procedure for professionals or paraprofessionals in some areas will be developed which includes the sets of manuals, workbooks, units, activities, courses, events, materials, etc., which comprise a training experience.

Any specialized training required for a program can focus on at least five separate outcomes for the trainees.

Figure 1. Minimal Set of Program Components to be Specified for Fully Characterized Programs

Program Objectives	Program Components (Products)		Child Outcomes	Item Sets Used to Measure Outcomes for Each Component
	Teacher Variables (Process)	Curriculum Activities (Content)		
O_1	T_1	A_1	C_{1x}	$I_{T_{11}A_{11}} \ldots I_{T_{1k}A_{1k}}$
	T_2	A_2	C_{1y}	$I_{T_{21}A_{21}} \ldots I_{T_{21}A_{21}}$
		A_3	C_{1z}	$I_{A_{31}} \ldots I_{A_{3k}}$
O_2	T_3		C_2	
	T_4	A_4		
.				
.				
O_n	T_n	A_n		

1. To achieve attitudinal changes or at least assimilation and acceptance of the program's values and goals.
2. To achieve an understanding of the program's operating components and essential features.
3. To achieve or attain the required level of knowledge and understanding about certain phenomena which will be a part of the content of the program (e.g., knowledge of language development in young children).
4. To achieve or attain the required level of proficiency in performance of certain instructional techniques required in the implementation of the program (e.g., skill in the use of responsive teaching techniques).
5. To achieve or attain the required level of proficiency in diagnostic, evaluative, or problem-solving skills required as a teacher (e.g., use of an observational check list).

From an evaluation point of view, the evaluation of a training program is a two-step process. At its simplest level of analysis, evaluation of the packaging format of a training program is focused upon the degree to which the training program produces the desired level of the several regulating variables operating in or through the persons trained by it. Evaluation of the effects of the several regulating variables is focused upon the multivariate set of child outcomes, which each is presumed to be causally related to. It may be difficult, however, in practice, to disentangle the separate effects of each. A possible evaluation sequence is shown in Figure 2.

Figure 2. Minimal Characterization Required for Evaluation of a Training Program

Objectives of Training Program	Desired Level of Regulating Variables Via Teacher Behaviors	Child Outcomes
C_1	X_1	Y_1
C_2	X_2	Y_2
C_3	X_3	Y_3
.	.	.
.	.	.
C_N	X_N	Y_N
Focus of Evaluation of Packaging Format for training program		Focus of Evaluation of Regulating Variables achieved through training program

Note: Each component of the training program is presumed to be included because it is related to the attainment of one or more described teacher behaviors which are in turn presumed to be desirable because they are related to one or more desired child outcomes.

In the next section, the application of these procedures to the final development and field evaluation of the Syracuse Responsive Care Program is discussed.

Site Consideration

The Responsive Care Program is now in the final stages of its research and development cycle, and will be pilot tested in five to seven sites during the 1973-74 school year. The purpose of this testing will be to assess the problems and program weaknesses which are encountered when

one attempts to replicate the program in field sites remote from the program developers and researchers and independent of constant monitoring.

CEMREL will select potential sites, with the Syracuse staff assisting in the preliminary and final negotiations. Final site selection will be dependent on the following criteria, all of which are essential to program participation:

1. Availability of Title funds or other monies necessary to start-up costs and program maintenance.
2. Provisions for staff replacement or free periods to permit training.
3. Fulfillment of the minimum requirements for total space and space differentiation.
4. Extent of staffing and willingness to interact with the developers, and cooperate in data collection and observation of program.

In selecting sites, CEMREL would like to select sites that are representative of day care centers and preschool situations as they commonly exist in the field. Although we will avoid situations that are obviously atypical, it will be difficult to randomly sample sites in light of the limiting conditions for participation. Instead, we will attempt to describe the characteristic of the sample, and indicate how the characteristic of our sample may restrict the generalizability of our findings. It should be readily understood that the conditions under which this program will be installed in the future should be quite similar to those in the present study.

Sample Size

In addition to the present center operating at Syracuse, the following types of classes will be required for this year's pilot test.

1. Five classes--Responsive Care Program.
2. Three classes--A well-defined structured program.
3. Three classes--Conventional program.

Preservice and inservice teacher training sessions will be conducted by the Syracuse staff and monitored by Syracuse and CEMREL jointly. The effects of the training procedures, the extent of program implementation, and child outcomes will be assessed by the CEMREL staff.

Data collection will be coordinated by the CEMREL staff. The results of training and the effectiveness of program implementation will be assessed in all sites. In addition to a detailed description of site, a record keeping system will be used to track the individual child's use of the materials within each of the areas of the program. The teachers from each site will be observed and rated at two time points during the year to assess their degree of responsive teaching. A random sample of students from each site will be observed and rated at the beginning, middle, and end of the year on a repertoire assessment inventory. A random sample of students from each site will be individually measured at the beginning and end of the year to evaluate their growth in general cognitive skills and to evaluate changes in their attitude-related behaviors.

The results of the assessment of training and the effectiveness of program implementation will provide useful formative implementation data for the program developers and sufficient cost-effectiveness data for administrators. The measures pertaining to teacher responsiveness, individual

child use of materials, and repertoire assessment will provide information primarily useful to the developers, whereas the measures of cognitive skills growth will be most useful to administrators who are contemplating the use of programs similar to this one.

Based on the results of the initial pilot year studies and the resulting modifications of program components, such as training or expansion of the measures themselves, sufficient information should be available to allow for extended pilot testing of an improved Responsive Care Program in many additional sites during the following year.

The exact design for the Syracuse Responsive Care Program evaluation is still in its formative stage. A major part of the evaluation effort will be attention not only to the various child-related objectives discussed above, but also a careful evaluation of the relationships between the training program, the actual teacher behavior, children's use of materials, and the observed child outcomes.

Instrumentation

Seven sets of instruments are currently being developed or selected to help evaluate the Syracuse program in the pilot sites. Four of the instruments deal with assessment of the teacher training effort and degree of program implementation; the other instruments deal with changes in children's behavior repertoires, competencies, and attitudes.

Instruments Pertaining to Degree of Program Implementation and Assessment of Teacher Training

Test of Responsive Care Principles. As objectives for preservice training are formulated, items will be constructed for those objectives in

order to develop an instrument that has content validity in assessing the accomplishment of the objectives. Such an instrument will be used primarily in the formative evaluation role of collecting data to revise the training program. Substantially, the items will not only assess what aspects of the programs the teachers know and comprehend best, it will also assess how well teachers are able to apply the basic principles that underlie the program.

The format of the instrument is not yet determined. The instrument will probably contain subsections that are given following each day of training, as well as in the form of a questionnaire given at the end of the program. There may also be an interview or a set of simulations built into the training and scored unobtrusively.

Degree of Implementation Instrument. The Syracuse Responsive Care Program has several features which make it unique among preschool programs. The task of the CEMREL evaluation staff is to specify in measurable form the essential program features and design a measurement instrument sensitive to them. After such an instrument has been designed, developed, it will be administered during the pilot installation of the Syracuse Responsive Care Program to determine the degree to which the local sites were able to implement a true replication of the Syracuse Responsive Care Program. The essential features relate to:

1. Physical setting.
2. Organizational features (ground rules for areas within the program and free access of children to any area almost any time).
3. Responsive teaching.

4. Staffing.

5. Materials and supplies.

6. Invitational activities.

7. One-to-one teaching.

The above list is not exhaustive, but was derived by the CEMREL evaluation staff after a careful examination of all the existing documentation of the Responsive Care Program by its staff.

The implementation instrument is being developed by generating a series of protocols describing hypothetical programs. Each protocol is related to one or more of the essential features of the Responsive Care Program. The Syracuse Responsive Care staff will then be queried as to whether a program with the various sets of features in the protocols would, in fact, be considered a Responsive Care Program. Each query will be probed varying several parameters within the protocol (e.g., what if the program has only three teachers). Out of these protocols and the probing by the evaluation staff will be generated an instrument which will scale the degree to which any early education program is a full or partial replication of the Syracuse Responsive Care Program.

Our current image of the instrument is that it will consist of a scoring manual and score sheets. The former will include items, whose scoring is based on observation, interview, and analysis of teacher-made documents; scoring procedures; and formulas to derive subscores, which are related to essential program features.

This instrument will be used throughout the installation year in the evaluation of classes taking part in the pilot test as well as in comparison classes to help us answer the following questions: Which of the

program's components have shown themselves to be most difficult to implement? How successful has the training been in regard to degree of implementation? Answers to these questions are important for revising the program. We also plan to relate subscores on the instrument to levels of child outcomes in order to generate hypotheses that relate antecedent conditions, transactions, and outcomes. Such hypotheses could help guide research in the areas of preschool curriculum and practice.

Responsive Teaching Assessment Instrument. Since teacher competency in and use of responsive teaching is a major goal of Syracuse teacher training, we feel a special instrument is needed to assess that goal. Indeed, the "responsive" method of teaching where a teacher attempts to expand a child's repertoire of behaviors within the context of his self-chosen activities is an essential feature of the Responsive Care Program. As such, we will attempt to assess the "responsiveness" of the classroom by looking at the responsive teaching styles of the teachers within each area of a site and across sites.

Although the instrument is presently only in an early stage of development, it will probably measure responsiveness by recording both the number and percentage of instances of responsive teaching out of the total number of observed possible responsive teaching triads, where "triad" is defined as a student behavior, followed by a teacher's reaction or lack of action, followed by either change or no change in the student's behavior. Thus, we will attempt to assess a teacher's responsiveness to a given situation and the resultant modifying effect on a child's behavior. The instrument will be used in an observation paradigm for random short-term intervals and random time periods throughout a given day. Present estimates

are that a minimum of one hundred triads can be observed on any given day.

Record Keeping System for Materials Usage

In order to ascertain with what materials children interact, CEMREL will design for the active area, the task area, and the expressive area a record keeping system or chart on which teachers could readily check which children are interacting with which materials. The chart, as presently conceived, would be in a matrix form, in which columns would denote children and rows would denote materials that are found in the particular area. Teachers would be requested on specific, set times each day (probably hourly) to note with which material each child in his or her area is engaged. The charts will be collected periodically and will be analyzed to determine for each child in which areas he is found most frequently and with which materials he interacts to most.

The chart will also include rows to indicate whether or not a child is interacting with adult(s), peer(s), or materials only. Since this data is collected at the individual child level, the scores may be subsequently used as a covariate on the individual child outcome measures.

Instruments Pertaining to Child Outcomes

Repertoire Expansion Instrument. CEMREL is currently developing a measure to be used at the beginning of the year to assess initial student repertoire and then again at the end of the year to assess the degree to which there has been broadening of the child's repertoire or range of behavior. The important dimension will not be frequency of behavior in any one repertoire category per se, but increased dispersion of behaviors across different repertoire categories. This procedure will assess the general goal

of the Syracuse Responsive Care Program that as a result of the program children should exhibit broadened repertoires of behavior. Since the program developers believe that no specific set of behaviors are any better than any other set of behaviors, the instrument must be broad enough to encompass any behavior which a child may exhibit.

Although this instrument is presently in the developmental stage, it will utilize an observational paradigm to describe in detail the observable behaviors of a specific child during the course of a given instructional day. These behavioral descriptions will be collected for varying time intervals at different periods of the day until a fixed number of behaviors (e.g., 100 behaviors) are obtained over a fixed period of time (e.g., one week).

Each of the observed behaviors must fit into one of a set of behavioral categories. As an example, suppose over a period of a week we would have a sample of 100 behaviors for each child, each of which can be fitted into one of twenty-five categories. For each child, then, and for the class, it would be possible to derive an estimate of the probability of each category of behavior being represented in the child's existing repertoire. By using an information theory model, we can take an entropy measure for each child based on category probabilities on occasions during the year. This measure would tell us the degree to which the behavior was spread over the twenty-five categories versus the degree to which the child tends to exhibit relatively more behaviors in one category than in another one.

The hypothesis, then, is that over a nine to ten month treatment period in the Syracuse Responsive Care Program, expansion of the behavioral

repertoire for each child could be inferred from the degree to which the behaviors are distributed over the category set. At the beginning of the year, one would expect that the observed behaviors of a group of children would cluster in a few of the categories. By the end of the year, the behaviors of these children should be more evenly spread out across the category set.

This measurement technique, somewhat innovative in the field of early childhood education, will be pilot tested by the CEMREL evaluation staff on some of the DARCEE evaluation data[1] to determine whether this type of measurement technique will yield adequate information relevant to the Syracuse concept of broadened behavioral repertoires. An alternative scoring procedure based upon a domain-referenced framework is also available.

Standard Child Outcome Assessment Instrument(s). Assessing whether children's repertoires broaden for children in the Responsive Care Program is directly relevant to that program's major goal. School and day care administration in a position to choose whether or not to adopt the Responsive Care Program are probably also interested in assessing other child outcomes, in particular specific skills related to sensory discrimination, understanding of basic concepts, ability to count, and so on.

The Test for the Assessment of Basic Skills

The alternative forms of the Test for the Assessment of Basic Skills were developed to evaluate changes in cognitive and psychomotor skills of

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[1]Scores from the TABS are expressed as probabilities for each domain based on the number of items passed in each.

preschool children. Although the test is primarily focused on kindergarten or four- and five-year-old children, it has been used with children as young as three years of age. Ideally, one form should be administered at the beginning of the school year and the other form administered at the conclusion of instruction. Almost anyone who is familiar with children of this age can be successfully taught to administer this test.

The test was developed within a domain-referenced framework. Thus, a physical copy of the test is but one selection of content within each domain surveyed. Forms A and B of this test were selected by random assignment from the specified replacement set (domain) for each item shell.

The content surveyed within the test covers a wide range of preschool skills. However, primary emphasis is on selected skills from objectives relevant to the typical preschool curriculum.

The 161-item test is individually administered during three twenty-minute sessions, with at least one hour between each session. Test scores are reported as proportions correct across both content and response methodology domains. The content domains--basic concepts, visual skills, auditory skills, language development and psychomotor skills--can be further broken down into more specific subscores for diagnostic purposes.

Boehm Test of Basic Concepts

The Boehm Test of Basic Concepts is a published instrument designed to measure children's mastery of concepts considered necessary for achievement in the first years of school. The test is group administered to older children of kindergarten age, but can be individually administered to younger children.

Two alternate forms of the test are available. Form A was published in 1969; Form B, which yields a total raw score equivalent to that of Form A, was released in 1971. Each form contains 50 items, with subscores pertaining to Space, Quantity, Time, and Miscellaneous concepts.

The test has previously been used by us in conjunction with the TABS, and, therefore, permits some additional comparison leverage.

Attitude Measure

The methodology for measuring attitudinal changes has not been finally decided. At present two types of methodology are being considered. One procedure is a card-sorting variant of the Likert technique of attitude measurement. In this procedure behavioral indicators of attitudinal objectives of interest to the program developers are used to produce a deck of cards with one indicator per card. For each child, the teacher's task is to distribute each card into one of five categories ranging from "extremely characteristic of this child" to "extremely uncharacteristic of this child." Once done, a record of the cards placed into each pile can be made, the cards can be randomized for each child. Total attitudinal scores can be obtained for each child by assigning each card a value of from 1 to 5, depending upon how closely the specified indicator was approached. A second procedure would use a 5 or 7 point scale anchored by attitudes of interest which could be used by observers to obtain assessment of these by time sampling, etc.

Evaluation Model

The program can be considered as involving three different sets of program objectives: (a) a physical design and materials set, (b) a teacher

training set, and (c) a set of learning objectives for the children enrolled in the program.

In the cross class comparisons, the class will be the experimental unit, the child or teachers will be the observational unit, and the principle evaluation design will involve comparisons between the Syracuse Day Care Center (the standard), pilot Responsive Care classes, conventional classes, and classes which use a structured preschool program such as DARCEE. Individual performance scores within classes will be adjusted for within class variation on materials usage or other program components before aggregation at the class level.

The evaluation model for the Syracuse Responsive Care Program is shown in Figure 3. The physical design and materials set of objectives and the components related to them are shown on the left-hand side of the figure, the teacher training set is shown in the middle of the figure, and the child learning-related objectives are shown on the right-hand side.

In the Syracuse Program, the physical design and organizational setting may be conceived to be sets of "mediating" variables for a fixed set of "process" variables. The curriculum materials, playground equipment, toys, etc., which are utilized by the teachers and pupils, can be conceived as sets of fixed "content" variables.

The teacher training objectives can be conceived as sets of "fixed" process variables and restricted sets of "stratified" fixed content variables in those areas where the curriculum activity choices are essentially chosen by teachers. The "packageable" components of the teacher training program involve sets of materials, guidelines, and procedures which are utilized both in the actual training sessions during the summer preceding program

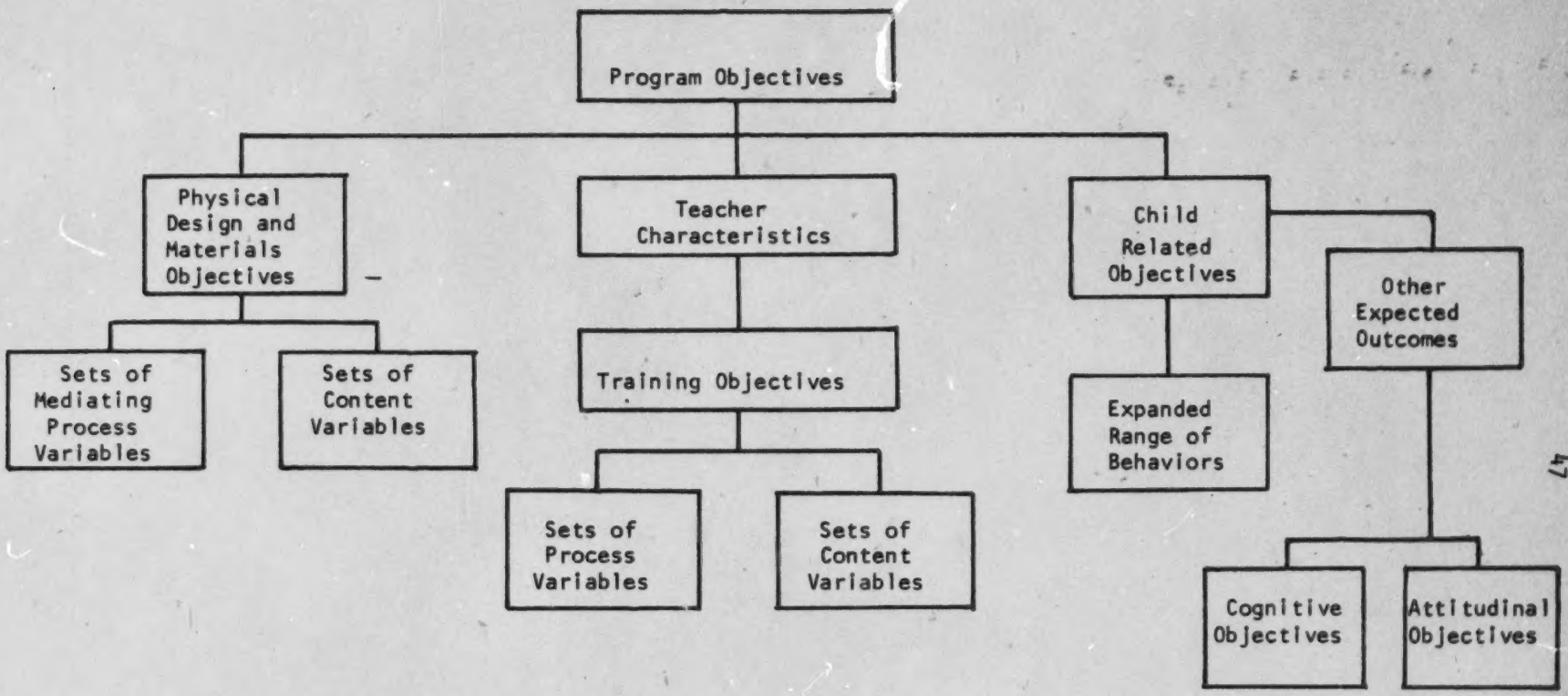


Figure 3. Evaluation Model Responsive Care Program

installation, and as reference material throughout the ensuing year. During the school year, an inservice training component is available which focuses on the maintenance or augmentation of initial training outcomes in the teachers.

The child-related outcomes are of three different types, with an expanded range of behavior for each child being the program's primary objective. However, "stratified, fixed" set of cognitive/intellectual outcomes and a "stratified, fixed" set of affective/attitudinal outcomes are also expected to result from the program, and these outcomes are comparable to the outcomes of other programs. For the cognitive/intellectual outcomes, content is hypothesized to be the major set of influencing variables and process is hypothesized to be a minor set. However, process is presumed to be the major set of influencing variables for the affective/attitudinal objectives. Both process and content are conceived to be major contributors to the expanded range of behaviors.

The major focus of the evaluation efforts are on a series of policy-oriented questions related to the separable components. The major evaluation questions and the instruments used to obtain data related to them are outlined in Figure 4.

Information related to each of the policy questions is obtained by aggregation of data over time about the major set of program components. This data is derived from instruments designed to assess the degree of implementation, and to assess the attainment of the desired program outcomes.

Figure 4. Major Evaluation Questions, Instruments and Occasions

Evaluation Questions	Instruments Used	Level	Occasions Aug.	Sept.	Nov.	Jan.	Mar.	May
A. Efficacy of Initial Training	*Rest of Responsive Care Principles*	Teacher	x					
B. Degree of Implementation of "desired" program	*Degree of Implementation Instrument*	Class		x		x		x
	Responsive Teaching Assessment Instrument	Teacher		x			x	
C. "Actual" Program Implemented	*Degree of Implementation Inst.*	Class		x		x		x
	Responsive Teaching Assessment Instrument	Teacher		x			x	
	Record Keeping System on Materials Use (daily)	Individual Child						
D. Efficacy of Program Components, Primary Objectives	*Repertoire Assessment Scale*	Individual Child		x		x		x
E. Efficacy of Program Components, Content Related	*Test for Assessment of Basic Skills (TABS)*	Individual Child		x				x
	Test of Basic Concepts (Boehm)	Individual Child		x				x
F. Efficacy of Program Components, Process Related	*Attitude Check List*	Individual Child		x				x

Data Analysis Plans

Tentative plans for the data analysis of the Syracuse Responsive Care Program involve several different procedures to test a general model of the program's overall effectiveness. The major sets of variables that can be explicated are as follows:

1. child background variables
2. teacher characteristics
3. pre and post achievement test measures
   a. TABS
   b. Boehm
4. pre and post attitude measures
5. actual program implemented
   a. organizational setting
   b. materials usage
   c. responsive teaching
6. pre and post range of children's behavior measure

Let the number of variables be as follows: Background k; TABS j; Boehm ℓ; Attitudes m; Physical setting n; Materials p; Responsive teaching q; Teaching characteristics r; Repertoire Assessment Scale s.

$\underset{k\times 1}{b}$ is the vector of background variables

$\underset{j\times 1}{t}$ is the vector of TABS subtest scores

$\underset{p\times 1}{c}$ is the vector of materials usage variables

$\underset{n\times 1}{p}$ is the vector of organizational setting variables

$\underset{qx1}{r}$ is the vector of responsive teaching variables

$\underset{mx1}{a}$ is the vector of attitude measure subscores

$\underset{\ell x1}{h}$ is the vector of Boehm subtest scores

$\underset{sx1}{s}$ is the vector of Repertoire Assessment subscale scores

$\underset{rx1}{d}$ is the vector of teacher characteristics measures

The covariance matrices which can be constructed will be found in Figure 5.

A series of multivariate regression analyses will be run to fit the various parameters or derivatives of them to a general causal model for each major outcome variable.

Preliminary modeling would suggest that combinations of matrices, or their vectors, or derivatives of them for each are as follows:

TABS [A, B, C]

Boehm [D, B, Q]

Attitude [E, F, G]

Repertoire Assessment Scale [H, K, J, N, I, P]

Responsive Teaching [L, M, O, N]

Sample Data Analysis

By way of example, we will illustrate the procedures to be used in the analysis of the TABS data as shown above. The analysis involves the three data matrices A, B, C. Child background variables are mapped onto TABS

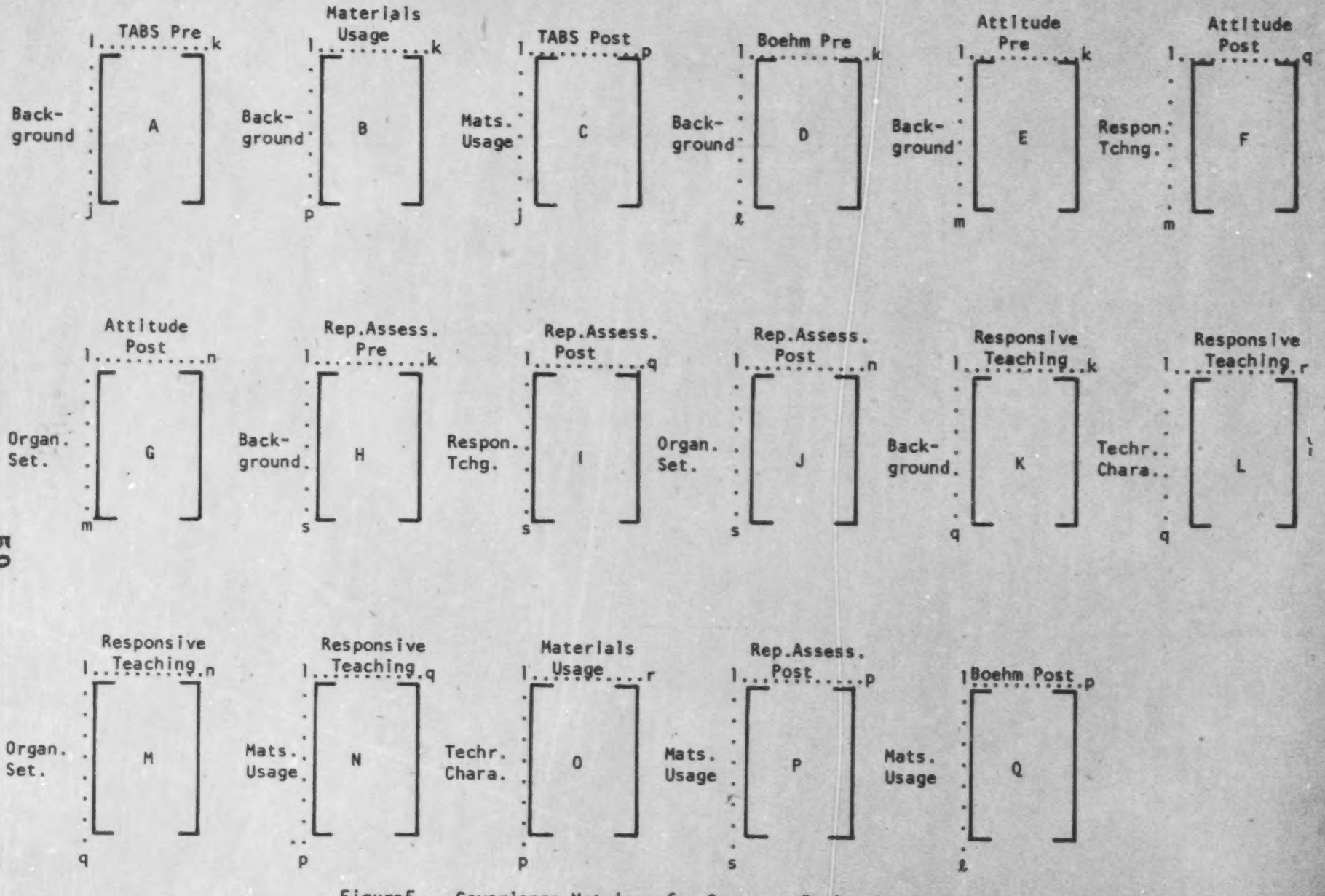
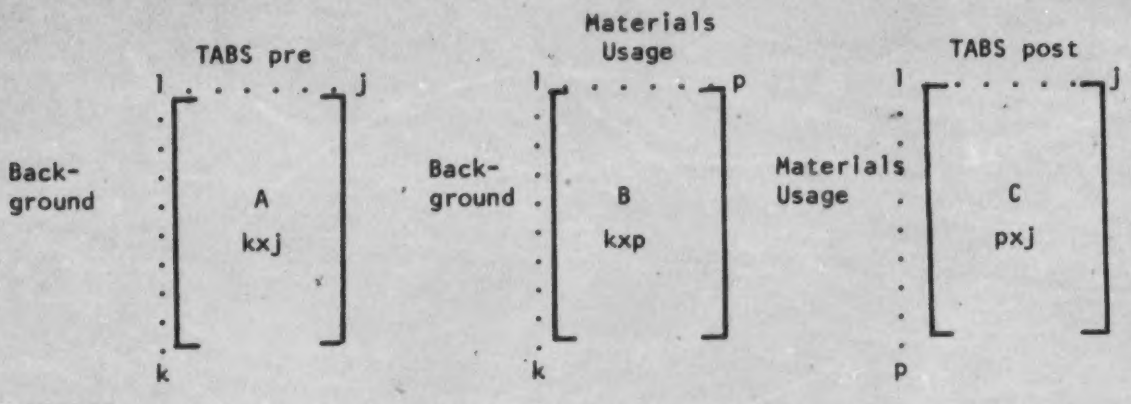


Figure5 . Covariance Matrices for Syracuse Evaluation

pretest scores (Matrix A) and materials usage (Matrix B), while materials usage is mapped onto TABS posttest score in Matrix C.



As a consequence, the following vectors can be defined:

$\underset{jx1}{\alpha}$ = a priori set of TABS content weights

$\underset{px1}{\beta} = \underset{pxj}{C}\ \underset{jx1}{\alpha}$ ← vector of regression coefficients which is maximally predictive of weighted average TABS posttest and which may be used to optimally scale materials usage scores (empirically derived)

$\underset{kx1}{\gamma} = \underset{kxj}{B}\ \underset{jx1}{\alpha}$ ← vector of regression coefficients for background which is maximally predictive of scaled materials usage variable and which may be used to optimally scale the background variables

$\underset{kx1}{\delta} = \underset{kxj}{A}\ \underset{jx1}{\alpha}$ ← vector of regression coefficients for background which produces the combination of background variables which is maximally predictive of TABS pretest score and which may be used to optimally scale the background variables

$\underset{kx1}{b}$ is the vector of background variables

$\underset{px1}{d}$ is the vector of materials usage variables

$\underset{kx1}{a}$ is the vector of TABS subtest scores

The last three defined vectors can be used as variables in combination with the following new derived variables.

$\underset{1xi}{X_1} = \underset{1xk}{b'} \underset{kxi}{\gamma}$ first background linear combination of composite scale

$\underset{1xi}{X_2} = \underset{1xk}{b'} \underset{kxi}{\delta}$ second background linear combination of composite scale

$\underset{1xi}{Y} = \underset{1xp}{c'} \underset{pxi}{\beta}$ optimally scaled materials usage score

$\underset{1xi}{Z} = \underset{1xj}{a'} \underset{jxi}{\alpha}$ a priori, scaled TABS score

Thus, there are seven variables for every child which can be averaged for each classroom providing seven classroom variables. Similar procedures will be used for Boehm, Repertoire Assessment Scale, and the attitude measures varying only in the number and type of parameter fitted to the model.

E. DISSEMINATION PLANS

Although the Cooperative Development Program staff at CEMREL is beginning the initial stages of final development and field testing of the Syracuse Responsive Care Program, it is still somewhat premature to elaborate in detail a dissemination plan for the program. In the past, the major CEMREL dissemination strategy has involved the use of commercial publishers. Commercial publishers with their marketing network and sales force wholly dedicated to the dissemination activity are most likely to get the program materials exposed to the largest number of the target group. In the case of the Responsive Care Program, this target group includes day care centers with children ages three through six as well as kindergarten and preschool programs attached to the local school district.

However, before we can even begin to consider the commercial publication route, there are several questions that we have to ask in the first pilot test year. In this first year the focus of the evaluation is to assess the degree to which the program is able to carry out its stated objectives as well as objectives others feel are important (e.g., attainment of standard child outcomes). If the evaluation shows that the program, or major elements of it, are not successful, CEMREL will then propose either to continue revision and retest or to discontinue any further final development. Obviously, neither Syracuse, CEMREL, nor N.I.E. should attempt to disseminate any program for which the evaluation data does not warrant large scale use.

Even if the evaluation data are positive, there are other issues which must be examined before dissemination plans can be finally implemented. Specifically, the installation activity will allow us to see which program materials are most easily implemented in the field. That is, which aspects of the program are implemented in accordance with the developer's objectives with little trouble and which aspects need further development. Since CEMREL will most likely choose to disseminate through a commercial publisher, this is of critical importance. CEMREL cannot allow dissemination of materials for which there is low probability of successful implementation. If funds are not available for the needed revisions before publication, the materials will not be disseminated but will rather be put into the public domain together with evaluation reports on their effectiveness.

If the first year's evaluation of the materials appears to meet the objectives of the developer as well as attain standard child outcomes, preparations will be made to disseminate the material through a commercial publisher. The first step in this dissemination activity is to draw up the plans for any final revisions which need to be accomplished to prepare the materials for publication. Based on our experience with DARCEE preschool materials, the revisions needed at this stage involve producing a prototype camera-ready section of program material for publishers to examine. This does not include camera-ready preparation of all of the materials.

The second step in the dissemination activities is to draft a Request for Proposal to publishers. As presently conceived, this Request for Proposal will be divided into two parts. The first part will include

a history of the program, a description of the program features, a description of the manuals and resource materials, including all evaluation instrumentation which will accompany the materials, a description of the sales market, a description of where the materials are currently in use, and the results of any evaluation data. The second part of the Request for Proposal will be a technical section of the specifications for proposal preparation. This will include a description of what qualifications the publisher needs, the criteria for materials design and production, a request for a marketing plan, a request for pricing and royalties information, and a description of the CEMREL Proposal Evaluation Committee. Finally, the Request for Proposal will specify the contractual arrangements for publication. These arrangements will include the negotiation, rights of CEMREL to examine the accounts of publishers insofar as they relate to the sale, rental, or licensing of the published material, rights of both CEMREL and the U.S. Government, and dates for information meetings and deadlines for submission of the proposal. After the Request for Proposal is drafted, this will be forwarded to the National Institute of Education for approval.

Simultaneously, a description of the program, its materials, and the results of the evaluation will be released through the Publishers' Alert Service. In addition to the Publishers' Alert Service, CEMREL has, in the past, sent a letter describing the program to publishers who have previously shown interest. Judging from our experiences with the DARCEE Preschool Program, the Publishers' Alert Service together with a letter describing the program, generates considerable interest in the program and publishers' representatives come to CEMREL for a half-day to a full-day

briefing to hear, in more detail, about the program and to examine some of the program materials.

After the Request for Proposal is approved by the National Institute of Education, the Request for Proposal will be sent to all interested publishers.

After a publisher has successfully negotiated a contract between CEMREL and the National Institute of Education, there still remains several tasks for the successful dissemination/publication of the program materials. These include an ongoing liaison between CEMREL and the commercial publisher, for final contract negotiation as well as contract compliance through the period of publication. In addition to this, technical liaison staff will be needed for final copy editing and substantive consultation with the publishers. Finally, technical help will be needed in reading and revising galley prints as they are returned from the publisher. After final revision of galley prints has been accomplished, CEMREL's efforts in the dissemination of the program materials will be functionally complete.

If commercial publishers are not willing to assume the publishing and dissemination role, by responding favorably to the Request for Proposal, CEMREL is prepared to distribute experimental versions of the material for extended field trials.

F. STAFFING PLAN

Program Staffing

Final development and field evaluation of early childhood programs is a complex process involving many people. Interactions among program developers, the coordinating staff, and the field test site personnel are important in bringing the program development and evaluation to a successful conclusion.

The function of CEMREL's overall Cooperative Development Program management is that of organizing the program to provide orderly, systematic review and assessment of planning, operations, and expenditure of resources. Continuous review of the program is carried out to insure high intellectual quality, sound management practices, and fiscal accountability. Part of the program guidance is provided by groups or committees such as CEMREL's Board of Directors and Program Advisory Committees of distinguished scholars. Direction also comes through the adoption of rational and programmatic management procedures for analyzing program development. Because the laboratory's major governing bodies are described elsewhere, this section will be concerned wholly with the Cooperative Development Program's present management and staffing and with the staff at Syracuse University who is collaborating in the final development effort.

The general staffing plan for the development and evaluation of the Syracuse Responsive Care Program is organized around six key people: the principal researcher/developer for the Syracuse subcontractor, director,

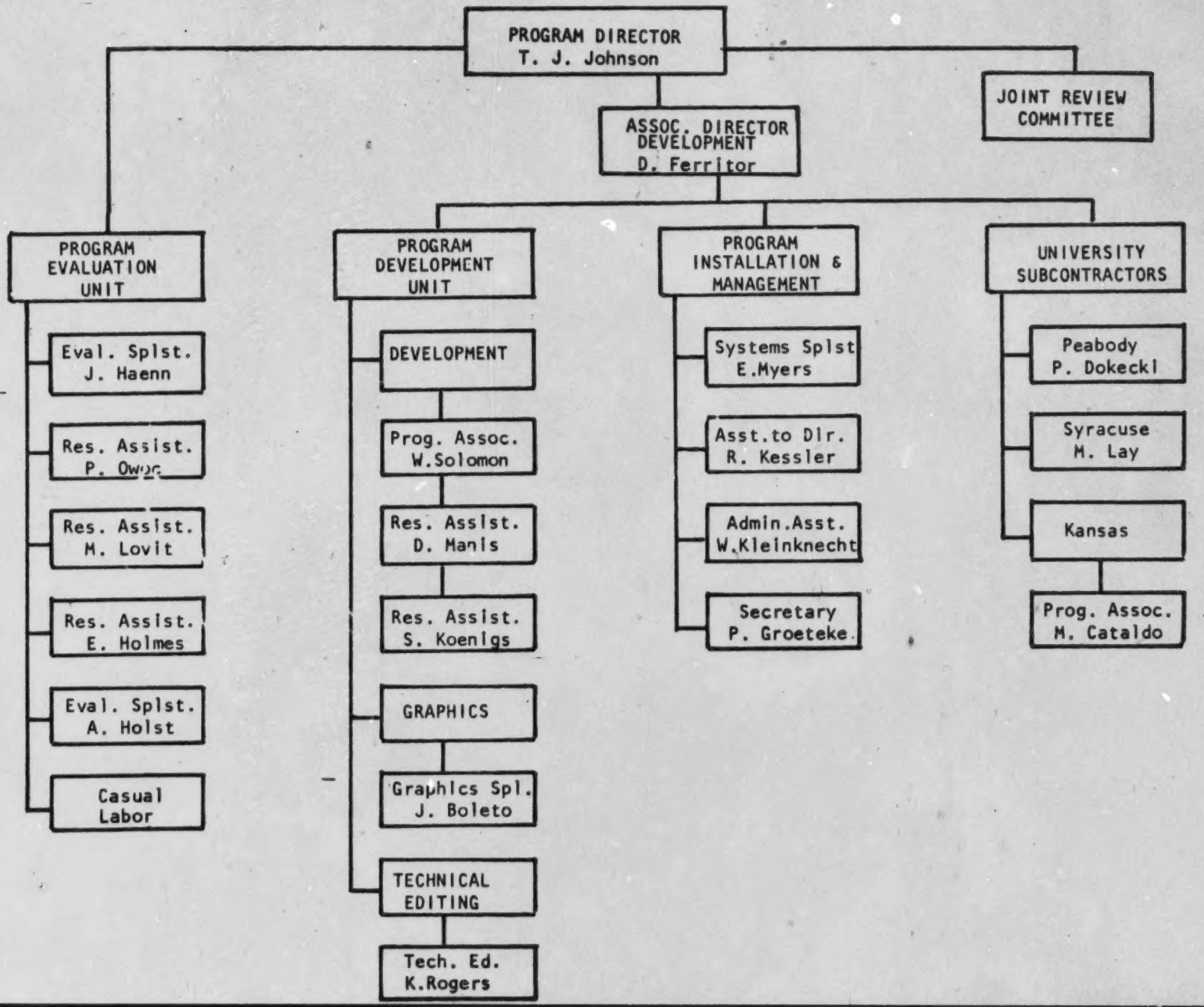
associate director, installation systems designer, program associate for development, and the evaluation specialist at CEMREL. The five people at CEMREL are responsible for the staffing and administration of the Cooperative Development Program, for maintaining the liaison between the program evaluation and the university-based researcher/developer, and for installing the program and performing the evaluation of its effectiveness. The combined group acts as a technical advisory group for program decisions. CEMREL also provides the services of a technical editor and a graphics specialist.

The intent of the program's organizational structure depicted in Figure 6, is to facilitate working relationships among staff members involved in a highly interdependent development process. Although the director makes all final decisions and is responsible to the president of the corporation, his decisions depend on information gained from the CEMREL staff and the university-based subcontractor. Each of the individuals in the group has responsibilities for staff within the program and for coordinating activities with other staff members. Both classes of function are specifically defined in the job descriptions which follow.

The Syracuse Responsive Care Program will be developed, implemented, and maintained by those individuals whose job descriptions are outlined as follows.

University-Based Research/Developer (subcontractor). The researcher/developer is responsible for explicating the program, with Cooperative Development Program assistance, for reviewing the program as it is installed at pilot sites, and for supervising the training of pilot site directors and teachers. This person assists in supervising the development of teacher and

Figure 6. Cooperative Development Program Organization



director training materials, and for serving as a resource person to help the CEMREL staff make its evaluation design and instruments appropriate to the Responsive Care Program.

The researcher/developer also has responsibility for maintaining a Responsive Care Program at the Syracuse University Early Childhood Education Center, for using that center as a site to test new materials, for training, and for collecting data that will help make possible program improvements.

Director. The program director is responsible for the general administration of the program. He analyzes and supervises the organizational structure, the total curriculum development operation, the field evaluation, the maintenance and recruitment of staff, and the quality control of the program. He supervises the management system, maintaining expenditure control and coordinating all subsystems. The organization of the Cooperative Development Program communication systems also will fall under his direct authority--this includes responsibility for external reporting regarding the program and for the development of a basic program plan.

The Associate Director for Development. The associate director for development is responsible for the development and quality of program content and graphics. He must oversee the coordination of individual package development, including scheduling and production. The associate director supervises the Cooperative Development Program curriculum development team and the related graphics staff, and maintains working relationships between CEMREL and the university-based subcontractor.

Systems Designer (Installation). Systems designer for installation has primary responsibility for the selection of field test sites and the implementation of the program, and in the development and maintenance of communication and cooperative relationships among the numerous field test sites, program development sites, and the coordinating staff. He is responsible for insuring that programs being developed meet the practical needs of its potential users, and are ready for installation.

Program Associate (Development). At CEMREL and the Research Associate at Syracuse, these staff members, in close cooperation with each other, are responsible for the production of the initial drafts of material for each of the components of the program. They supervise the writing, editing, and graphics for each of the products and monitor the revision cycles.

Evaluation Specialist. The evaluation specialist is responsible for the construction of the evaluation instruments, the data collection, and the analysis. Information gathered by the evaluation team is fed back through the other staff members to influence future program development.

Graphic Specialist. Program graphic specialist performs layouts and development functions as required for the graphic content of the program materials.

Technical Writer. The technical writer serves as a final check on all written package material to insure that the reading level is appropriate and to maintain quality control for style, form, and clarity of materials. This person also maintains liaison between the program and production/publication units for materials.

Program Review Committee. A joint Syracuse/CEMREL review panel is used to review revised versions of the program materials as they become available. This committee monitors the quality of revised materials and makes final recommendations for further revisions to the developer. The committee also reviews evaluation procedures and documentation.

CEMREL EXPERIENCE AND CAPACITY

CEMREL, Inc. is one of eleven National Educational Laboratories currently operating to improve education for the children of the nation. CEMREL was established June 15, 1966 under the Cooperative Research Act (P.L. 83-531 as amended). It is governed by a Board of Directors made up of leaders in education, business, and industry. In 1969, CEMREL was one of five educational laboratories to be approved for five-year funding, and in 1970 it was one of four awarded a facilities grant from the Office of Education for permanent buildings, which will be completed in 1973.

Since its inception, CEMREL has continually worked in cooperation with educators, administrators, businessmen, and the staffs of the research and development centers, as well as other educational laboratories to assess the needs of education and to insure optimal impact by avoiding duplication of effort.

CEMREL has concentrated its efforts in the development and application of curricula and instructional systems. The major programs which have evolved from this work are the Comprehensive School Mathematics Program, a K-12 program to innovate math instruction; the Aesthetic Education Program, a K-6 program to develop a coordinated program of materials in the arts; and the Instructional Systems Program, a preschool through grade three program for developing behavioral management and language development for inner-city children. The laboratory has moved from a regional to a national focus. Its staff has grown over the five-year period to approximately 200 full-time

professionals and non-professionals. In 1970, CEMREL was chosen to administer the National Program on Early Childhood Education.

In addition to its major programs, CEMREL in cooperation with state departments of education, universities, school districts, Title I and III projects, Model Cities Programs, and individual groups has been instrumental in initiating a number of projects in such areas as social studies, computer assisted instruction, theater, and child development. Many of these projects were continued under funding from other agencies with CEMREL's role becoming one of consultation and evaluation.

Annually, CEMREL is extensively reviewed by a Board of Visitors and by an Evaluation National Advisory Committee composed of statisticians, psychometricians, methodologists, and evaluation specialists. In addition, each program has its own National Advisory Committee of experts in their respective fields as well as staff associates of the same caliber who work regularly with the programs.

Since the work proposed here relies heavily on CEMREL staff assigned to the Evaluation Unit, the following pages are devoted to a more detailed description of it.

CEMREL's Evaluation Unit

One relatively unique feature of CEMREL is the existence of an independent evaluation unit. It is responsibility of the Central Evaluation staff to provide evidence concerning the work of CEMREL's products not only to the developer, but to the National Institute of Education, the professional community, and potential consumers as well. We believe that by creating a separate evaluation division within the organization, we have fostered not

only the independence and integrity of our evaluation efforts but a sensitivity to the information needs of our various audiences as well.

Currently, the evaluation staff is comprised of 15 professionals plus secretarial and auxiliary personnel. These individuals in general may be classified as educational and psychological researchers. Measurement and Statistics are the most usual backgrounds, although some individuals have substantial experience in microethnography, Piagetian Psychology, and human development. As a consequence of their involvement with a broad spectrum of innovative educational programs, our staff has developed far ranging competencies in the effective utilization of evaluation techniques.

Another distinctive feature at CEMREL is the use of advisory committees to help shape the focus and direction of our efforts. Each CEMREL program has such an advisory committee. Evaluation has one as well, composed of statisticians, psychometricians, methodologists, and evaluation specialists. For the past three years this committee was chaired by Michael Scriven. Currently on the committee are: Gene Glass, David Wiley, Albert Beaton, and George Madaus. Others who have served in the recent past have been Carl Bereiter, Glen Evans, and John Bolvin. The National Advisory Committee meets at least once a year for two to three days and reviews and criticizes the performance of the evaluation staff over the intervening period. The Advisory Committee reports its findings and conclusions to the President of CEMREL, as well as to the Director of Evaluation. Members of CEMREL's evaluation committee will review the work on this project.

While CEMREL has not engaged extensively in the conduct of evaluation studies external to its own programs heretofore, we believe that our

experience in dealing with the products and programs produced internally, in addition to the qualifications and experiences of our staff, certifies our competency in the field of evaluation.

Relevant Evaluation Experience

CEMREL's Evaluation Department designs and carries out evaluation studies of CEMREL's educational products, both while the products are being developed (formative evaluation) and when the products are in their final versions (summative evaluation). Below are two examples of the Evaluation Department's design and management of total evaluation efforts:

The Elements of Mathematics (EM) Program. The EM Program is that portion of CEMREL's Comprehensive School Mathematics Program which is designed for grades 7-12. It has reached the stage of development at which extensive pilot studies are feasible, and a three-year pilot study is presently under way. Since the study is being conducted with 16 classes in 10 widely scattered locations, it involves extensive planning to provide for teacher training and local supervision of materials. Elements of the study include: (1) a treatment vs. control design, (2) three standardized pretests to control for variation in the samples, (3) a standardized teacher questionnaire, and (4) three staff-developed achievement tests, one to be administered at the end of each of the three years of the study.

The Language and Thinking Program. The Language and Thinking Program is being developed to improve the cognitive skills of early elementary students, especially inner-city students. The first part of the program was pilot tested in four scattered locations last year, and this year we will conduct extended pilot studies in 131 classes in six scattered

locations. The study includes: (1) a treatment vs. control design, (2) focused interviews of teachers, (3) the development and revision of Mastery Learning Criterion Tests, (4) the development of a usage monitoring system, (5) the use of systematic, non-participant observation, and (6) the development and revision of teacher questionnaires.

The following examples present our experience in developing questionnaires and interview schedules:

The Aesthetic Education Program. As a part of the evaluation of CEMREL's Aesthetic Education Program, the Evaluation Department developed and analyzed the results of demographic data questionnaires, teacher questionnaires, and student questionnaires. There were five teacher questionnaires, one for each "package" that was pilot tested. The questionnaires included items about teacher background, usage patterns, quality of materials, teacher and student reactions, assessment problems, modifications, lesson sequence, relative preference for the lessons and packages, and evaluation of instrumentation. There were also five student questionnaires designed to be administered to non-readers as well as readers. These questionnaires covered general reactions to the packages and materials and the extent to which students understood directions and reading materials.

Western Kentucky University Teacher Preparation Evaluation Inventory. This was a questionnaire prepared for an outside contractor. It contained items about various aspects of teacher education, the relevance of teacher education to 20 problem areas in teaching, the quality of student services at Western Kentucky University, and general, open-ended questions.

Educational Improvement and the Organizational Climate of Schools. This project involved an extensive analysis and critique of the ways in which

the *Organizational Climate Description Questionnaire* (Halpin and Croft, 1962) has been used. It included assessments of past studies in which the questionnaire was used, determination of the appropriate unit of analysis (schools vs. school systems), and investigation of the impact of experimental intervention.

Motivation and Personality. Part of this project entailed extensive structural interviews centering on achievement with over 100 achieving and underachieving Negro and White boys and their mothers.

Early Developmental Adversity. Personal and social skills of children were studied by means of interviews with mothers using an instrument specially developed for use with lower class, unsophisticated mothers. This project involved collecting follow-up data on 1,000 children over a five-year period.

A project in CEMREL's Cooperative Development Program is also relevant to this contract since it demonstrates CEMREL's capability for understanding the needs of large scale data collection efforts.

Characterization Studies--DARCEE Preschool Program

In 1970, CEMREL inherited responsibility for a well researched, but still nascent, preschool education program--the Preschool Program of the Demonstration and Research Center for Early Education (DARCEE) of George Peabody College. The program had been funded under the National Laboratory for Early Childhood Education, which was moved to CEMREL in 1970.

CEMREL's early childhood division was assigned responsibility for clarifying and specifying the essential aspects of the programs in

preparation for developing it as a quality educational product for commercial use. Over the past two years, the CEMREL staff has applied this assignment to obtaining translatable experience in specifying and defining educational products and in understanding the stages necessary in a quality development process.

Researchers at the Demonstration and Research Center for Early Education has concentrated much of their efforts over a ten-year development period on hothouse experimentation and teacher training for the DARCEE Preschool Program. CEMREL (with USOE encouragement) urged that DARCEE look at the possibilities of widespread dissemination and installation of the program. Consequently, the children exposed to the DARCEE Preschool Program jumped from around 50 in 1969 to over 900 in 1971-72. Training was expanded. Four CEMREL funded pilot test sites (47 classrooms) were installed in which the program was tested and refined for eventual distribution. At DARCEE and CEMREL a new concentration of energies focused on characterizing and conveying the main principles of the program to previously untrained teachers.

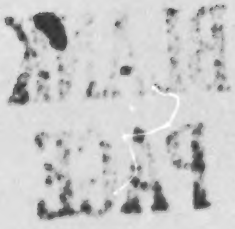
CEMREL and DARCEE held joint meetings, work sessions, and classroom observations. Together they drew up the minimum set of materials needed to translate DARCEE into a replicable, and eventually a publishable, program. DARCEE prepared a general program overview with the theoretical and philosophic rationale and the eleven "principle" essentials for installation of the program. This document later served as the basis for a comprehensive *Teacher's Guide* and a *Record Keeping System*. The work of writing and clarifying materials for the revised DARCEE program was shared jointly by DARCEE and CEMREL. Staff members with demonstrated interest or

expertise were assigned without regard to their organization. *A Guide for Trainers of DARCEE Teachers*, eleven curriculum resource guides, and a *Materials Use Manual* were all written and revised within the past year. These cooperatively produced materials were mutually reviewed and accepted by each group. Installation and evaluation materials were prepared to measure both installation reliability and child outcomes in the pilot test classrooms. These materials will prove useful to other installers of the DARCEE Preschool Program.

Joint development has had its ups and downs for both the CEMREL and the George Peabody groups. The products now about to emerge have benefited by passing two sets of quality control requirements. Each product has been applied to the scrutiny and criticism of separate research and development teams, whose interests, although compatible, often do not coincide. CEMREL carries away from its experience with DARCEE valuable lessons of characterization and program specification that can be applied to other programs with different needs and philosophies. The first of these is the Syracuse Responsive Care Program.

A great deal of CEMREL's job in characterizing early childhood programs has been to incite new thinking and to suggest new development approaches to program authors. Since programs may be quite dissimilar in both theoretical outlook and in the physical programs they prescribe, CEMREL feels that it can contribute to the viability of programs by pointing out problems and in indicating unclarified program areas. But beyond the general usefulness of the independent developer's role, CEMREL has gained in-depth experience in the characterization, installation, and evaluation of the educational programs.

VITAS



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PUBLICATIONS

Lally, R. J., Meyer, W.J., Lay, M.Z. and Lindstrum D. Intellectual characteristics of children with day care experience from six months to three years. Syracuse, New York: Syracuse University Early Childhood Education Center, 1971.

Lay, M.Z. and Meyer, W. J. Effects of early day care experience on subsequent observed program behaviors. Syracuse, New York: Syracuse University Early Childhood Education Center, 1971.

Lay, M.Z. and Meyer, W.J. Comparisons of children with early day care experience and children without previous formal experience. Syracuse, New York: Syracuse University Early Childhood Education Center, 1972.

Lay, M.Z. The Syracuse criterion referenced individualized program for teachers--SCRIPT. Paper presented at American Association of Colleges of Teacher Education annual meeting, Chicago, 1973.

Dopyera, J.E. and Lay, M.Z. Assessment of open program structure. In B. Spodek and H. Walberg, Eds., Studies in Open Education. In press.

Lay, M.Z. The child development component of the Syracuse Model Teacher Preparation Program. Paper presented at National Association for the Education of Young Children, annual meeting, Salt Lake City, 1969.

Lay, M.Z. Early education. In D. Allen and E. Seifmen, Eds. Teacher's handbook. Chicago: Scott Foresman, 1971.

Lay, M.Z. Early childhood education. In Curriculum handbook for executive administrators. American Association of School Administrators, 1972.

Lay, M.Z. and Dopyera, J.E. Analysis of early childhood programs: a search for comparative dimensions. Urbana: University of Illinois Curriculum Center, 1972.

Lay, M.Z. Preschool and elementary school. In A.N. Charters, Ed. Toward the Educative Society. Syracuse, New York: Syracuse University Publications in Continuing Education, 1971.

Lay, M.Z. The responsive care model: a program manual and report of implementation. Syracuse, New York: Syracuse University Early Childhood Education Center, 1972.

Lay, M.Z. Nursery education today. Keeping up with elementary education. (NEA - E/K/N/E publication) Fall 1969.

Lay, M.Z. the current scene in early childhood education. Today's Education, 1970, 59, 37-38. (Condensed and reprinted in Education Digest, 1970, 36, 36-38.

Lay, M.Z. The effects of supplementary small group experience on task orientation and cognitive performance in kindergarten children. Final report, Office of Economic Opportunity, Contract No. OEO 4120, 1969.

Lay, M.Z. Child Development component. In Specifications for a comprehensive undergraduate and inservice teacher education program for elementary teachers. Final report, U.S. Office of Education, Bureau of Research. Contract No. OEC-0-8-089018-3313 (010), 1968.

Dopyera, J.E. and Lay M.Z. Assessing the program environments of Head Start and other preschool children: a survey of procedures. Final report. Office of Economic Opportunity, Contract No. OEO 4120, 1969.

Lay, M.Z. SERIES ON RESPONSIVE CARE PROGRAM MODEL (Syracuse, New York: Syracuse University Early Childhood Education Center)

Arrangements and procedures for initiating a responsive care model. 1972.

Criteria for selection of equipment and materials for the responsive care and other early childhood programs. 1972.

Lists of equipment and materials for responsive care programs. 1972. Co-authored with Barbara Clark and Bette Tryon.

Description of staff responsibilities and decision-making procedures in the responsive care program. 1972.

Plans for working with directors of responsive care replication centers. 1973.

Staff training plans for the responsive care program implementation. 1973.

Child Repertoire Assessment Record. 1972.

Teacher's Guide For Use of Child Repertoire Assessment Record. 1972.

Examining Adults' Actual and Potential Responsiveness To Children: Implications For Staffing Responsive Care Programs. 1972

Slide show narrative. 1972. (Co-authored with Barbara Clark and Bette Tryon,)

Plan of research for experimental variation in the responsive care program. 1972

A time all his own: The individual session of the responsive care program. 1972.

The nature of parent involvement in the responsive care program. 1973.

THOMAS J. JOHNSON

As Director of the National Program on Early Childhood Education, Dr. Johnson is responsible for the overall administration and coordination of the planning, research, development, demonstration, and diffusion activities conducted by the central staff and throughout the network of the National Program's early childhood education centers and investigators.

Dr. Johnson received A.B., M.A., and Ed.D degrees from Washington University in St. Louis where he served as an instructor for two years and a Senior Research Associate for one year.

After receiving his doctoral degree, Dr. Johnson served as an Assistant Professor of Educational Psychology for three years and as Director of the Learning Laboratory and Research Center for one year at the University of Wisconsin. From 1965-1967, he was Associate Professor of Education and Psychology at Washington University, from 1967-1972 he was on extended leave of absence, and from 1966-1969 served as the Director of Title IV Graduate Research Training Grant Program. In 1967, the Ontario Institute for Studies in Education chose Dr. Johnson as a summer research fellow.

Dr. Johnson has been with CEMREL, Inc., a national educational laboratory, since its inception in 1966. At that time he served as Acting Director for Research and Development. In 1968 he was appointed Deputy Director of CEMREL, and in 1971 Director of the National Program. In 1972 he was also appointed a Vice President of CEMREL.

During his years of service to CEMREL, Dr. Johnson has been involved in the continual planning and evaluation of CEMREL's three major programs in mathematics, aesthetic education, and instructional systems and has authored or co-authored some 40 books, articles, and documents including evaluation reports, summaries, and indexes to research in aesthetics, creativity, educational media, mathematics, early childhood, and reviews of test and measurements in these areas. His principal research interests are in the structure of knowledge, knowledge acquisition, and the R&D process in the social sciences.

Dr. Johnson is a member of the American Psychological Association, the American Educational Research Association, the National Council of Measurement in Education, the International Association for the Advancement of Educational Research, and the Psychometric Society.

VITA

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Educational Experience:

1962	Washington University, St. Louis, Missouri Ed.D., Major, Educational Psychology
1959	Washington University, St. Louis, Missouri M.A., Major, Counseling Psychology
1952	Washington University, St. Louis, Missouri A.B., Major, Journalism, Education

Professional Experience:

1972-present	Vice President, Research, Development and Evaluation, CEMREL, Inc., St. Louis, Missouri
1971-present	Director, National Program on Early Childhood Education, CEMREL, Inc., St. Louis, Missouri
1970-1971	Associate Director and Director of Evaluation CEMREL, Inc., St. Louis, Missouri
1968-1970	Deputy Director, CEMREL, Inc., St. Louis, Missouri
1967-1972	Extended leave of absence, Associate Professor of Education and Psychology, Washington University, St. Louis, Missouri
1967	Summer Research Fellow, Ontario Institute for Studies in Education, Toronto, Ontario, Canada
1966-1969	Director, Title IV Graduate Research Training Grant Program, Washington University, St. Louis, Missouri
1966-1967 (Spring)	Acting Director, Research and Development, CEMREL, Inc., St. Louis, Missouri
1965-1967	Associate Professor of Education and Psychology, Washington University, St. Louis, Missouri

1964-1965	Director, Learning Laboratory and Research Center, Department of Educational Psychology, University of Wisconsin, Madison, Wisconsin
1962-1965	Assistant Professor of Educational Psychology, University of Wisconsin, Madison, Wisconsin
1961-1962	Senior Research Associate, Washington University, St. Louis, Missouri
1959-1961	Instructor, Washington University, St. Louis, Missouri
1952-1959	Teacher, Counselor, Hancock High School, St. Louis, Missouri

Professional Organizations:

American Psychological Association, Division 8 and 15
American Educational Research Association
International Association for the Advancement of Educational Research
National Council of Measurement in Education
Psychometric Society

Professional Activities:

Program Committee, Division C, AERA, 1965
Review Editor, Journal of Educational Research, 1965-1968
Occasional Reviewer--Review of Educational Research, 1969-1971
Research Committee, ASCD, 1966-1970
Economic Advisory Committee, Regional Industrial Development Corporation, St. Louis, Missouri, 1969-1970
Secretary/Archivist, Special Interest Group on Qualitative Analytical Techniques, Measurements, and Strategies, AERA, 1969-present

Academic/Organizational Activities:

University of Wisconsin, Graduate Admissions Committee, Ed. Psych. Department, 1963-1965
Washington University, Graduate Admissions Committee, Graduate Institute of Education, 1966-1969
Washington University, University Subcommittee on Rights of Human Subjects, 1967
CEMREL, Inc., Publications Review Committee, 1966-present

Director or Co-Director of Grants:

"Small Groups Research" Group Psychology Branch, U.S. Navy, NONR816(11), 1961-1962
"Motive and Traits," U.S. Office of Education, Project #1226, 1962-1963
"Evaluation of the Educational Program," Mark Twain Summer Institute, 1962
"The Teacher's Perception of Motivation and Causation," U.S. Office of Education, Project #2598, 1964-1969
"The Study of Time Perception," University of Wisconsin Graduate School, 1963
"The Wisconsin R&D Center for Cognitive Learning: Motivation Research," U.S. Office of Education, 1964-1965
Graduate Research Training Grant, U.S. Office of Education, 1965-1969
"Multi Media Utilization of State Television," Kentucky State Department of Education, 1968-1969
The National Program on Early Childhood Education, U.S. Office of Education, 1971-present

Consultantships:

University of Wisconsin, Department of Curriculum and Instruction, Madison, Wisconsin, 1963-1965 (Project Evaluation)
University of Wisconsin, Department of Administration, Madison, Wisconsin, 1966 (Project Evaluation)
Central Midwestern Regional Educational Laboratory, St. Ann, Missouri, 1965-1966 (Program Design, Planning Review)
Ontario Institute for Studies in Education, Department of Computer Applications, Toronto, Ontario, Canada, 1967 (Project Evaluation)
Wisconsin Democratic State Committee, 1967 (Election Data Analysis)
Congressman James Symington Campaign Committee, 1968 (Political Survey)
Model Cities Program, St. Louis, Missouri, 1968 (Program Design, Planning)
Memphis State University, Memphis, Tennessee, 1969 (Program Evaluation)
U.S. Office of Education, NCERD, 1969-1972 (Program Planning)
Arts in Education Council, St. Louis, Missouri, 1969 (Project Evaluation)
Illinois State University, Department of Education Administration, Normal, Illinois, 1969 (Project Evaluation)
Arts in General Educational Program, JDR3RD Foundation, St. Louis, Missouri, 1969 (Project Evaluation)
Quality Education Development Corporation, Washington, D.C., 1969-1971 (Corporate Planning, Project Evaluation)
Ferguson-Florrisant School District, St. Louis, Missouri, 1970 (Program Planning)
Indiana University, School of Education, Bloomington, Indiana, 1970 (Program Planning)
Educational System for the Seventies, Mineola, New York, 1970-1971, (Program Planning, Project Evaluation)

Consultantships (Continued):

Senator Stuart Symington Campaign Committee, 1970 (Election Data Analysis)
Marine Research Institute, Environmental Education Division, Rockport, Maine, 1970-1971 (Market Survey)
Washington University, Educational Satellite Project, St. Louis, Missouri, 1971 (Program Planning)
Scandia Corporation, Training Division, Albuquerque, New Mexico, 1971 (Program Evaluation)
Southern Illinois University, School of Education, Edwardsville, Illinois, 1972 (Program Planning)
Mehlville School District, St. Louis, Missouri, 1972 (Program Evaluation)
Simplimation, Inc., St. Louis, Missouri, 1972 (Corporate Planning)

Invited Addresses to Professional Groups, 1962-present

University of Wisconsin, Department of Pediatrics, Madison, Wisconsin, November 1962
Wausau School District, Wausau, Wisconsin, February 1963
University of Wisconsin, Department of Curriculum and Instruction, March 1964
University of Wisconsin, Laboratory of Experimental Design, November 1964
Tenth ASCD Curriculum Research Institute Eastern Section, Miami Beach, November 1964
Eleventh ASCD Curriculum Research Institute Eastern Section, Washington, D.C., November 1965
Southern States Council for Educational Research and Statistics, Nashville, Tennessee, September 1966
Phi Delta Kappa, University of Missouri, Columbia, Missouri, March 1967
Department of Sociology, Washington University, St. Louis, Missouri, April 1968
National Art Education Association, New York City, October 1969
Annual Research Symposium, Indiana University, Bloomington, Indiana, August 1971
Scandinavian Educational Research Council, Oslo, Norway, October 1971
National Association for Education of Young Children, Atlanta, Georgia, November 1972

Author/Coauthor Unpublished Administration and Management Documents:

Progress Report, CEMREL, Inc., St. Ann, Missouri, 1966, 1967, 1968
Annual Budget Justification, CEMREL, Inc., 1968, 1969, 1970, 1971
Five-Year Budget Projections (1969-1974) Spring 1970
Mathematics Program, Aesthetics Program, Instructional Systems Program, Program Support, Evaluation
The Cost of Educational Development, 1970
Basic Program Plans--Program Support and Management, 1969; National Program on Early Childhood Education, May 1971, August 1971, April 1972

Other Products:

Children's Books

A Child's Garden of Random Polygons, 1970

Computer Programs (Programming or Program Design)

Analysis of Variance. Computing Center, Washington University, 1961
Fractional Factorial Design Analysis Program. Computing Center, Washington University, 1968
Word Association Data Analysis Program, CEMREL, Inc., St. Ann, Missouri, 1971 (with R. Robb)
Famulus II: A Computerized Research Retrieval Program, Academic Computing Center, University of Wisconsin, Madison, Wisconsin, 1972 (with A. Roberts et al)
IDA: Item Definition Analysis Program, CEMREL, Inc., St. Ann, Missouri, 1971 (with J. Deken)

Publications:

1962

Smith, L. M. and Johnson, T. J. Motive and Trait Correlates of Pupil Schema. Final Report. U. S. Office of Education, Project 1226, 1962.

Hudgins, B. B., Smith, L. M., and Johnson, T. J. Pupil Perceptions of Their Classmates. J. Genet. Psychol., 1962, 101, 401-405.

Iannaccone, L., Johnson, T. J., and MacFarland, W. J. The Effect of Homogeneous Grouping on Attitudes of the Gifted. Research and evaluation report. Mark Twain Summer Institute, Clayton, Missouri, December, 1962.

1963

Johnson, T. J. and deCharms, R. The Influence of Experimentally Produced Affect on Time Perception. Technical Report #18, Group Psychology Branch, Office of Naval Research, Nonr 816 (11). May, 1963.

Johnson, T. J. and Smith, L. M. Motive and Traits and Schema. Presented at meetings of the American Psychology Association, Philadelphia, Pa., August, 1963.

1964

Johnson, T. J. The Teacher's Perception of Motivation. Presented at meetings of the American Educational Research Association, Chicago, February, 1964.

Johnson, T. J., Feigenbaum, Rhoda, and Weiby, Marcia. Some Determinants and Consequences of the Teacher's Perception of Causation. J. Educ. Psychol., 1964, 55, 237-246.

1965

Johnson, T. J., Meinke, D. L., Van Mondfrans, A. P., and Finn, Judith. Word frequency of synonym responses as a function of word frequency of the stimulus and list position of the response. Psychon. Sci., 1965, 2, 235-236.

Johnson, T. J., and Van Modfrans, A. P. Order of solutions in ambiguous anagrams as a function of word frequency of the solution words. Psychon. Sci., 1965, 3, 565-566.

Johnson, T. J., and Smith, L. M. Achievement, affiliation, and power motivation in adolescents. Psychol. Rep., 1965, 16, 1249-1252.

Johnson, T. J., and Smith, L. M. Motives and age. Presented at meetings of the American Educational Research Association, Chicago, February 1965.

1966

Baldwin, T., and Johnson, T. J. Efficacy of reinforcement as a function of teacher punitiveness and expertise. Presented at meetings of the American Educational Research Association. Chicago, February 1966.

Baldwin, T., and Johnson, T. J. Teacher Behaviors and Effectiveness of Reinforcement. Technical Report #9, University of Wisconsin, Research and Development Center for Learning and Re-education; Madison, 1966.

Johnson, T. J. Motivation: Some principles, problems, and classroom applications. In McDonald, J. and Leeper, R. (Eds.) Language, Motivation, and Meaning, Washington: ASCD, 1966.

1967

Johnson, T. J., Miller, D. M. and Wolfe, R. G. Index to Social Science Research on Childrens Theatre, St. Louis, CEMREL, 1967.

Johnson, T. J. Stratification in the Context of Regional Educational Research and Development Activities. Presented at Colloquim on School-Community Characteristics. University of Wisconsin, Madison, 1967.

Hoetker, J., Johnson, T. J., Hendrick, Fannie, and Robinson, W. M. Technical Report: Assessment of the National Laboratory Theatre Program in New Orleans and Providence. St. Louis, CEMREL, 1967.

Johnson, T. J. Three Contemporary Trends in American Education. In Moral Dilemmas in Education. McDonald, J. and Clements, M. (Eds.) Madison: University of Wisconsin, 1967.

1968

Owoc, P., Bishop, R., and Johnson, T. J. Word Frequency of associative chains at 3 grade levels. Presented at meetings of the American Educational Research Association, Chicago, Illinois, February, 1968.

Johnson, T. J., and Miller, D. M. Workbook for training bibliographic Technicians, CEMREL, St. Ann, Missouri, 1968.

1969

Johnson, T. J. A Methodology for the analysis of cognitive structure. Technical Report #4, CEMREL, Inc., St. Ann, Missouri, 1969.

Johnson, T. J., Feigenbaum, Rhoda, and Welby, Marcia. Some determinants and consequences of the teacher's perception of causation. In Learning in Social Settings. Miles, M. B., and Charters, W. W., Jr. (Eds.), Allyn and Bacon, New York, 1969.

Johnson, T. J., Baldwin, Thelma, and Wiley, D. E. The Teachers perception and attribution of causation. Final Report, U. S. Office of Education, Project 2598, Washington University, St. Louis, Missouri, 1969.

1970

Johnson, T. J., and Hess, R. J. Tests in the Arts, CEMREL, St. Ann, Missouri, 1970.

Ecker, D. W., Johnson, T. J., Kaelin, E. F. Aesthetic Inquiry. In Gowin, B. D., and Millman, J. (Eds.) Review of Educational Research, 1970.

Johnson, T. J., and Deken, J. G. Design, selection and construction of items for confirmatory sorting studies. Presented at meetings of the American Educational Research Association, Minneapolis, Minnesota, March, 1970.

Johnson, T.J., Ashton, P., Deken, J., and Robb, R. Cognitive and associative structure in economics. Presented at meetings of the American Educational Research Association, Minneapolis, Minnesota, March, 1970.

Johnson, T. J. Summary and Index to Research in Music 1900-1968, CEMREL. St. Louis, Missouri, 1970.

Johnson, T. J. Summary and Index to Research in Creativity Relevant to Aesthetic Education, 1900-1968. CEMREL, St. Ann, Missouri, 1970.

Johnson, T. J. Summary and Index to Research in Educational Media 1900-1968. Vol. 1. CEMREL, St. Ann, Missouri, 1970.

Johnson, T. J., Baldwin, Thelma, and Wiley, D. E. Teacher's perception and attribution of causation. Presented at meetings of the American Educational Research Association, Minneapolis, Minnesota, March, 1970.

Johnson, T. J. Summary and Index to Research in Literature 1900-1968. CEMREL, St. Ann, Missouri, 1970.

Johnson, T. J. Summary and Index to Research in Films 1900-1968. CEMREL, St. Ann, Missouri, 1970.

1971

Johnson, T. J. and Hess, R. J. Tests in the Arts, Revised Edition, CEMREL, St. Ann, Missouri, 1971.

Hess, R. J. and Johnson, T. J. Changes in Cognitive Structure After a Semester of College Instruction. Presented at meetings of the American Educational Research Association, New York, New York, February, 1971.

Johnson, T. J. A Conceptual Learning Model and Instructional Implications. Presented at meetings of the Special Interest Group on Qualitative Analytical Techniques, Measurements, and Strategies of the American Educational Research Association, New York, N. Y., February, 1971.

1971

Johnson, T. J., Kerr, N., Miller, G., Van Mondfrans, A. P., and Kamil, A. Some Characteristics of Conceptual Chaining. Presented at meetings of the American Educational Research Association, New York, N. Y., February, 1971 (mimeo).

Deken, J. G. and Johnson, T. J. Treatment of Similarity Data by the Method of Item Definition. Presented at meetings of the Psychometric Society, St. Louis, Mo., April, 1971.

Johnson, T. J. Summary and Index to Research in Theatre 1900-1968. CEMREL, St. Ann, Missouri, 1971.

Johnson, T. J. Summary and Index to Research in Art 1900-1968. CEMREL, St. Ann, Missouri, 1971.

1972

Johnson, T. J. Summary and Index to Research in Educational Media 1900-1968. Vol. II, CEMREL, St. Ann, Missouri, 1972 (in press)

Johnson, T. J. and Hess, R. J. Test in Mathematics. CEMREL, St. Ann, Missouri, 1972 (in press)

Johnson, T. J., Hess, R. J., and Deken, J. Summary and Index to Research in Mathematics Education, 1900-1968. CEMREL, St. Ann, Missouri, 1972 (in press)

Haenn, J., Johnson, T. J., and Owoc, P. Tests and Measurements in Early Childhood Education. Presented at meetings of the American Educational Research Association, Chicago, Illinois, April, 1972.

Johnson, T. J. Evaluation in the Context of Product and Program Development in Laboratory and R&D Center Settings. Presented at meetings of the American Educational Research Association, Chicago, Illinois, April, 1972.

Johnson, T. J. Changes in Cognitive Structure After a Unit of Instruction on Parts of Speech. Presented at meetings of the Special Interest Group on Qualitative Analytical Techniques, Measurements, and Strategies of the American Educational Research Association, Chicago, Illinois, April, 1972.

Johnson, T. J. Issues in the Design of Educational Programs at the Early Childhood Level. Presented at the Annual Summer Symposium of the University of North Carolina, Greensboro, June, 1972.

1973

Johnson, T. J. Product and Program Evaluation from a Domain Referenced Framework (to be published in Educational Technology, Spring 1973)

Johnson, T. J. Program Development and Evaluation Emphasizing Full Program Characterization. To be presented at Evaluation Symposium, AERA, Spring 1973.

Johnson, T. J. The Products of Educational Research and Development. CEMREL, Inc., St. Louis, Missouri, 1973.

Johnson, T. J. New Developments in Curriculum Theory (To be presented at meeting of the Special Interest Group on Qualitative Analytical Techniques, Measurement, and Strategies, AERA, Spring 1973)

Kelly, H. & Johnson, T. J. Major Issues in Curriculum Development (in progress)

Johnson, T. J. A Theory of Curriculum and Instruction (book in progress)

Johnson, T. J., Ferritor, D. E., Haenn, J. F., Myers, E. M., Rogers, K., & Solomon, W. The Development and Evaluation of a Structured Preschool Program: A Case Study, September 1973 (in progress)

Johnson, T. J., Ferritor, D. E., Haenn, J. F., Myers, E. M., Rogers, K., & Solomon, W. The Development, Installation, and Evaluation of an Unstructured Preschool Program: A Case Study, September 1974 (in progress)

Johnson, T.J., with Wiley, D. E., Wolfe, R. G., Miller, D. M. (Eds.) The Complete Angle on Sorting--A Collection of Papers and Notes, CEMREL, Inc., St. Ann, Missouri, 1973 (in progress)

Johnson, T.J., Haenn, J., & Owoc, P. Tests and Measurements in Early Childhood, CEMREL, inc., St. Ann, Missouri, 1973 (in progress)

DANIEL E. FERRITOR

Associate Director, NPECE

During his four years with CEMREL, Inc., Dr. Ferritor has served as Assistant Program Director for the Learning Disabilities Program, Associate Director for the Instructional Systems Program, and as a staff associate in planning for the National Program on Early Childhood Education. In August 1971, Dr. Ferritor was appointed Associate Director for the National Program on Early Childhood Education.

Dr. Ferritor has done extensive work in special education (particularly in day care programs for non-verbal psychotic children), behavior modification, teacher training, and program development and implementation. With Robert Hamblin, David Buckholdt, Martin Kozloff, and Lois Blackwell, he has recently completed a book, The Humanization Processes, which summarizes their work with four problem areas in early childhood education, i.e., education for the very young child, for the inner-city poor, for the non-verbal psychotic, and for the hyperaggressive-hyperactive child. This book was among the three finalists in the Sorokin Award for outstanding contributions to sociological theory.

Dr. Ferritor received a B.A. degree from Rockhurst College, Kansas City, Missouri in 1962 and M.A. and Ph.D. degrees in sociology from Washington University in 1967 and 1969. Specialization in his advanced studies was in social psychology and socialization patterns in the United States and cross-culturally.

Dr. Ferritor worked as a grade school teacher for two years before beginning work on his masters degree at which time he became a research assistant in the Medical Care Research Center, Jewish Hospital in St. Louis. In 1967 he served as research assistant in the Social Exchange Laboratory at Washington University and directed a preschool program for autistic children. He served as Assistant Professor in the Department of Sociology/Anthropology at the University of Arkansas for one year and served as Assistant Professor in the Department of Special Education, Southern Illinois University, Edwardsville, part-time since coming to CEMREL.

Recently he has completed a behavior modification teacher training series for inner-city teachers. The teacher training packages, developed with David Buckholdt of the CEMREL staff, is unique in that it is an audio visual presentation designed so that it can be used by individual teachers as a self-instructional device. He is also providing technical assistance in the development of a similar training package for teachers of emotionally disturbed non-verbal children.

In addition to professional papers published in Transaction magazine, the Journal of Applied Behavior Analysis, The Psychological Record, and several edited works, Dr. Ferritor has presented papers at the American Sociological Association, the American Psychological Association, American

Educational Research Association, and the Association for Children with Learning Disabilities. He has also served as consultant to the Quality Educational Development's Performance Contracting Project, the Savannah State College EPDA Remedial Reading Project, and to the Belleville, Illinois early childhood education project.

VITA

NAME:	Daniel Edward Ferritor
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DATE OF BIRTH:	November 8, 1939
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PERSONAL DATA:	Married Wife's Name: Patricia Jean Children: Kimberly Ann, Kristin Marie, Sean Patrick

EDUCATION:

1969	Washington University, St. Louis, Missouri Ph.D., Major, Sociology/Social Psychology
1967	Washington University, St. Louis, Missouri M.A., Major, Sociology
1962	Rockhurst College, Kansas City, Missouri B.A., Major, English

EMPLOYMENT EXPERIENCE:

1971-present	Associate Director, National Program on Early Childhood Education.
1970-1971	Associate Director, Instructional Systems Program, CEMREL, Inc. (75% time)
1970-1971	Program Associate in Planning, National Program on Early Childhood Education. (25% time)
1970-present	Assistant Professor, Southern Illinois University, Edwardsville Campus, Division of Education, Department of Speical Education. (25% time)
1969-1970	Assistant Program Director, Learning Disabilities Program, CEMREL, Inc. (50% time) Assistant Professor, Southern Illinois University Edwardsville Campus, Division of Education, Department of Special Education. (50% time)
1967-1968	Assistant Professor, Department of Sociology Anthropology, University of Arkansas, Fayetteville, Arkansas

1967	Research Assistant, Social Exchange Laboratory, Washington University, St. Louis, Missouri Directed Preschool Program for Autistic Children.
1965-1967	Research Assistant, Medical Care Research Center, Jewish Hospital, St. Louis, Missouri. Preparation of Computer Programs for Data Analysis.
1962-1964	Teacher, Our Lady of Lourdes Grade School, Raytown, Missouri.

ORGANIZATIONAL AFFILIATIONS:

American Educational Research Association
American Sociological Association
American Psychological Association

PUBLICATIONS:

Books

(with Hamblin, R., Buckholdt, D., Kozloff, M., and Blackwell, L.) The Humanization Process, John Wiley & Sons, Inc., 1971

Articles

(with Hamblin, R., Buckholdt, D., Bushell, D., and Ellis, D.) "Changing the Game from 'Get the Teacher' to 'Learn'," Transaction, January 1969

Reprinted in Human Intelligence. Edited by J. McV. Hunt, Transaction Book: New Brunswick, N.J., 1972

(with Hamblin, R. and Kozloff, M.) "Socialization Disorders and Familial Exchanges" to appear in work edited by Reuben Hill, published by The University of Minnesota Press, In Press

(with Buckholdt, D., Hamblin, R., and Smith, L.) "The Non Effects of Reinforcement for Attending Behavior on Work Accomplished and of Work Accomplished on Attending Behavior." Journal of Applied Behavior Analysis, 1972, 5, No. 1

(with Wodarski, J., Hamblin, R., and Buckholdt, D.) "The Effects of Low Performance Group and Individual Contingencies on Cooperative Behavior Exhibited by Fifth Graders." The Psychological Record, 1972, 22

Reprinted in Control of Human Behavior in Education Edited by Virich, Stachnif, and Mabrey, Scott Foresman and Co., In Press

Papers

(with Kozloff, M.) "A Training Program for Parents of Autistic Children" presented at the Midwest Sociological Association, Indianapolis, Indiana, May 1969

(with Buckholdt, D., Hamblin, R., and Smith, L.) "Effects of Contingent Reinforcement for Attending Behavior on Work Accomplished" presented at the American Educational Research Association meetings, New York, February 1971

(with Doss, H., Buckholdt, D., and Hamblin, R.) "Effect of Contingent Reinforcement on Reading Performance with Primary Special Education Children" presented at the American Educational Research Association meetings, New York, February 1971

(with Wodarski, J., Hamblin, R., and Buckholdt, D.) "Effects of Individual and Group Contingencies on Arithmetic Performance" presented at American Educational Research Association meetings, New York, February 1971

(with Buckholdt, D. and Rankin, D.) "Classroom Reinforcement Program for Adult Education" presented at American Psychological Association, Washington, D.C., September 1971

(with Wodarski, J., Buckholdt, D., and Hamblin, R.) "Effects of Individual and Group Contingencies on Cooperative Behavior" presented at Society for Behavior Research and Therapy, Washington, D.C., September 1971

(with Buckholdt, D. and Myers, E.) "Training Teachers in the Use of Behavior Modification." Paper presented at Association for Children with Learning Disabilities meetings, Atlantic City, New Jersey, February 1972

"Program Development for the Preschool Years." Paper presented at the National Association for Education of Young Children meetings, Atlanta, Georgia, November 1972

(with Solomon, W., Haenn, J., and Myers, E.) "The Development, Use, and Importance of Instruments that Validly and Reliably Assess the Degree to which Experimental Programs are Implemented." Paper accepted for presentation at the American Educational Research Association meetings, New Orleans, Louisiana, February 1973

(with Buckholdt, D. and Willis, H.) "The Use of Reinforcement Procedure to Increase Completion of Homework Assignments." Paper accepted for presentation at the American Educational Research Association meetings, New Orleans, Louisiana, February 1973

(with Buckholdt, D.) "Order and Scheduling Effection Reinforcing On-Task Behavior in the Classroom." Paper accepted for presentation at the American Educational Research Association meetings, New Orleans, Louisiana, February 1973

Educational Product Development

(with Buckholdt, D.) Teacher Training Program in the Use of General Reinforcement System for Preschool and Elementary Classroom, CEMREL, Inc., St. Ann, Missouri, 1971

(with Buckholdt, D.) Instructional System Package to accompany Sullivan Programmed Reading Series, CEMREL, Inc., St. Ann, Missouri, 1971

(with Solomon, W., Haenn, J., and Myers, E.) A Rating Form to Analyze Correspondence of Preschool Classrooms to Preschool Classroom Standards, CEMREL, Inc., St. Ann, Missouri, September 1972

Technical Reports

(with Hamblin, R., Kozloff, M., and Blackwell, L.) The Severely Retarded Child, CEMREL, Inc., St. Ann, Missouri, 1968

(with Buckholdt, D.) Program Data dnd Data Collection Procedures. Technical Report No. 9, Instructional Systems Program, CEMREL, Inc., St. Ann, Missouri, 1970

(with Kelly, H.) Analysis of Select Extant Early Childhood Programs. National Program on Early Childhood Education, St. Ann, Missouri, 1971

Invited Presentations

"Reinforcement Strategies for Remedial Reading," EDPA Reading Workshop, Savannah State College, Savannah, Georgia, September 1969

"Use of Reinforcement Strategies in Education for the Disadvantaged," Workshop on Education for the Disadvantaged, Georgia Southern College, Statesboro, Georgia, April 1971

"Innovation in the Field of Early Childhood," Early Childhood Supervisor Workshop, Belleville, Illinois, June 1971

WARREN H. SOLOMON

As Program Associate for development, Dr. Solomon has concentrated his main efforts in the past year on the evaluation and the development products for the NPECE/DARCEE Model Installation Project. He played major roles in providing formative evaluation inputs to DARCEE in their preservice and inservice training and in the development of the "NPECE Test for the Assessment of Basic Skills," "A Sequence of DARCEE Cognitive Objectives: A Record Keeping System for the Teacher," "The Rating Form to Analyze Correspondence of Preschool Classrooms to DARCEE Preschool Classroom Standards," the "Teacher Training Manual," and the "Test of DARCEE Essentials." In preparation for the above roles, Dr. Solomon spent much time as an observer of DARCEE teaching and training in Nashville, Louisville, and Macon.

Dr. Solomon received his B.A. degree at Oberlin College in 1959 with a major in government. Following completion of his M.A.T. degree in social studies education at Harvard University, he assumed the role of social studies teacher in a junior high school of Ladue School District in St. Louis County. He taught social studies there for six years, during three years of which he also served as department chairman and as officer in his district's community teacher's association. During his final year as a teacher, Dr. Solomon began working with Harold Berlak in the development of the Washington University Elementary School Social Studies Project.

In 1966, Dr. Solomon began full-time doctoral study at Washington University, where he continued his work as a member of the development staff of the elementary social studies project. In the fall of 1968, Dr. Solomon assumed the role of Coordinator of Secondary School Social Studies Student Teaching at Washington University, where he supervised and coordinated the work of doctoral students who supervised student teachers. He continued in this role for two years, and in the second year he also assumed the position of Instructor and taught the course "Curriculum and Instruction in Social Studies."

In 1968, Dr. Solomon became Coordinator of the Junior High School Field Station in the St. Louis--St. Louis County Title III Social Studies Project, a project aimed at the analysis, selection, development, and diffusion of new social studies curricula. While he served in that position, he completed a special paper toward his doctorate that compared Piaget's and Kohlberg's stages of moral development, and he began his dissertation study which was focused on the development of instructional theory using participant observation to analyze the teaching of an experimental unit in an elementary school classroom.

His experiences in curriculum analysis and development, in the participant observation methodology, and in the diffusion of educational innovations has been important in his work with DARCEE this past year and should be of importance as he works with Syracuse in the future.

Name:	Warren Howard Solomon
Address:	39 Branford Drive St. Louis, Missouri 63132
Personal Data:	Born February 3, 1937 in St. Louis, Mo. Married to Joan Marks Solomon Children: Edward (Ted) Russell Solomon (9/11/63) Sally Faye Solomon (9/10/65)

Education

1971	Washington University, St. Louis, Missouri Ph.D., Major, Education
1960	Harvard University, Cambridge, Massachusetts M.A.T., Major, Social Science Education
1959	Oberlin College, Oberlin, Ohio B.A., Major, Government

Professional Experience
(Partial List)

1971-present	Program Associate, CEMREL's National Program on Early Childhood Education
Summer 1972	Instructor in Elementary Education, University of Missouri, St. Louis, Mo.
1968-1971	Instructor in Education (social studies and student teaching) Washington University, St. Louis, Mo.
1960-1966	Teacher and Department Chairman (junior high school social studies), Ladue School District, St. Louis County

Publications
(Partial List)

Articles:	(with G. Lasher) "A Model for the Selection and Implementation of Social Studies Curricula," High School Journal, April 1971

Papers: (with D. Ferritor, J. Haenn, & E. Myers) "The Development and Use of Instruments That Reliably and Validly Assess the Degree to Which Experimental Programs Are Implemented." AERA Convention, February 1973

"Toward the Development of a Theory of Teaching: A Participant Observer's Study of the Experimental Trial of Lessons from a Social Studies Curriculum Project." Thesis, August 1971

"Participant Observation and Lesson Plan Analysis." AERA Convention, January 1971

Educational Product Development

(with D. Ferritor, J. Haenn, & E. Myers) "The DARCEE Classroom Assessment Scale." CEMREL, August 1972

Edited "A Guide for DARCEE Teachers." CEMREL, August 1972

(with J. Haenn) "NPECE Test for the Assessment of Basic Skills." CEMREL, September 1971

(with H. Berlak) developed units in the Washington University Elementary School Social Studies Project's Curriculum, 1967-1968.

Research Competence/Professional Interests

Analysis of teaching, program evaluation, supervision of teachers and student teachers, curriculum analysis and development (especially, but not limited to social studies and early childhood education).

References

References are on file at the Washington University Placement Office, St. Louis, Missouri, 63130

February 9, 1973

EDWIN C. MYERS

As Coordinator of Installation and Systems Design, Dr. Myers is responsible for the overall coordination and management of CEMREL installation operations. At the present time this involves the investigation and resolution of problems arising from pilot test installations of model early childhood programs in various sites around the country.

As part of his responsibilities, Dr. Myers contributes to the development of program materials.

Before coming to CEMREL, Dr. Myers spent three years managing the development of the Walden Schools, Inc., a research based day care center. The educational component of the program was designed around a performance contracting arrangement with parents. In the development of this program, Dr. Myers developed innovative management and programmed budgeting systems.

Dr. Myers worked for five years at the University of Minnesota. During that time he served as Director of the Bancroft School Laboratory for the Experimental Analysis of Instruction where he carried out and supervised research projects investigating various aspects of children's learning. He later joined the University's Bureau of Institutional Research, where he designed and managed a university-wide system to improve the efficiency of the University's student evaluation of instructional programs. Dr. Myers was also an Assistant Professor of Educational Psychology, teaching courses in learning, programmed instruction, research design, measurement and statistics, and a predoctoral associate at the Center for Research on Human Learning.

As a resident of the St. Paul Model Cities and Ramsey County OEO Target Area A, Dr. Myers consulted for two years with both the Model Cities Education Task Force and with the staff of the Ramsey County Citizens Committee for Economic Opportunity on various education and day care projects.

Dr. Myers has also been a member of the National Committee for Children and Youth, the White House Conference on Children and Youth, a consultant to the National Commission for Teacher Education and Professional Standards of the National Education Association, and a supervisor of Student Teachers at Hamline University in St. Paul.

Dr. Myers received his B.S. degree in psychology from Ursinas College in 1964 and his Ph.D. in educational psychology from the University of Minnesota in 1969. He currently holds membership in the National Educational Association, the American Educational Research Association, the American Psychological Association, and the National Association for the Advancement of Science.

V I T A

NAME:	Edwin C. Myers
ADDRESS:	863 Oakbrook Lane University City, Missouri 63132
DATE OF BIRTH:	February 12, 1942
BIRTHPLACE:	Lancaster, Pennsylvania
PERSONAL DATA:	Married

EDUCATION:

1969	University of Minnesota, Minneapolis, Minnesota. Ph.D. Major: Educational Psychology; Minor: Experimental Psychology
1964	Ursinus College, Collegeville, Pennsylvania. B.S., Major: Psychology; Minor: Political Science

EMPLOYMENT EXPERIENCE:

Present	Systems Designer--Installation, CEMREL, Inc. NPECE, St. Ann, Missouri
1970-71	Research Associate, Bureau of Institutional Research, University of Minnesota
1969-71	Assistant Professor, Educational Psychology, University of Minnesota
1968-70	Director, Bancroft School Laboratory for the Experimental Analysis of Instruction, University of Minnesota
1967-69	Instructor, Educational Psychology, University of Minnesota
1966-69	Pre-doctoral Associate, Center for Research in Human Learning, University of Minnesota
1968	Instructor and Supervisor of Student Teachers, Hamline University
1966-68	Fellow (N.D.E.A.), Educational Psychology, University of Minnesota
1965-66	Teaching Assistant, Educational Psychology, University of Minnesota

1962-65	Member, National Committee for Children and Youth, Follow-up Committee for the 1960 White House Conference
1964-65	Teacher, Psychology, William Tennant High School
1963-64	Consultant, National Commission for Teacher Education and Professional Standards, National Education Association
1963-64	National President, Student National Education Association

CURRENT RESEARCH AREAS:

Reinforcement Contingencies for Controlling Errors
- in matching and discrimination problems.
- in school subjects.

Complex Contingency Management Systems
- approximations to domain referenced teaching and measurement.
- instructional systems.
- a performance-based teacher education system.
- school system management.

BOOKS & EDUCATIONAL PRODUCTS:

With Comeaux, P. Procedures for the Daily Opening and Closing of a Center for Young Children. CEMREL, Inc., 1971.

With Solomon, W., Ferritor, D., and Haenn, J. A Rating Form to Analyze Correspondence of Preschool Classrooms to DARCEE Preschool Classroom Standards. CEMREL, Inc., 1972.

ARTICLES: "Punishment of a S^{Δ} Responding by the Omission of Scheduled Reinforcement." Submitted to Journal of The Experimental Analysis of Behavior.

PAPERS: With Ferritor, D. and Buckholdt, D. "Training Teachers in the Use of Behavior Modification." Paper presented at Association for Children with Learning Disabilities, Atlantic City. New Jersey, February 1972.

INVITED PRESENTATIONS:

"The Young Child--A Person." Presented at the National Catholic Education Association, Minneapolis, Minnesota, April 1971.

"A Domain Referenced Preschool." Presented at The National Association for the Education of Young Children, Minneapolis, Minnesota, November 1971.

TECHNICAL REPORTS:

With Solomon, W., Brown, C., and Haenn, J. "A Preliminary Report on the Installation of the DARCEE Preschool Model." CEMREL, Inc., January 1972.

With Collins, T., Coulson, J., Ferritor, D., Kelly, H., and Rogers, K. "Design and Management of an Impact Study on Day Care." CEMREL, Inc., October 1971.

JOSEPH F. HAENN

Evaluation Specialist, CDP

As NPECE's Evaluation Specialist, Mr. Haenn is responsible for test construction and validation or selection for the formative and summative evaluation of model programs developed within NPECE and for the overall evaluation of NPECE's component center projects--the analysis of projects for their design and "fit" into the goals of NPECE.

Recently, Mr. Haenn has designed a test for basic skills for the pre/post summative evaluation of the DARCEE preschool model. He is also developing three formative tests and a practice exercise to be utilized by teachers of the DARCEE classrooms.

Mr. Haenn received a B.S. in health education from East Stroudsburg State College in Pennsylvania, an M.S. in educational research from Bucknell University in 1968 and is currently a Ph.D. candidate in measurement, evaluation, and statistical analysis at the University of Chicago (completed all requirements with the exception of the dissertation). Mr. Haenn's computer programming abilities include FORTRAN II, IV, and V, COBOL, IBM 1130 Assembler, and FASBAC (remote terminal language).

While working on his masters degree, Mr. Haenn was a full-time research assistant for the Bureau of Research and Administration, Pennsylvania Department of Public Instruction. In this capacity he served as statistical analyst on projects involving immediate learning reinforcement in a complex mental-motor skill (driver training) using motion pictures, factors affecting learning to read, and the effects of student reactions to teaching methods, as well as consultant to a preschool and primary education project jointly conducted by the State Department and the Ford Foundation.

At the University of Chicago, Mr. Haenn served as a measurement, evaluation, and statistical analysis consultant in the Department of Education, and as a research assistant to Dr. David E. Wiley, Graduate School of Education. He served as consultant and statistical analyst on projects concerning the determinants of residential adult education effectiveness, and adult educator's decision-making regarding advanced degrees. He was statistical analyst for the American Bar Foundation project on parallels in black and white children's complaint behavior and ideas about authority, aggression, justice, and legality; and he served as consultant and programmer/analyst for the Chicago Board of Education's project, the creation of a FORTRAN IV program to produce monthly Project Manpower reports for the Model Cities Program.

Mr. Haenn was a summer research associate in Product Integration at the Southwest Regional Laboratory for Educational Research and Development. He came to the National Program in June 1971.

Since coming to CEMREL, Mr. Haenn has directed the evaluation effort for the National Program. To this end he has developed the TABS test, a 150+ item domain-referenced test to test the DARCEE objectives, supervised the classification of test items and the first analysis of the items, designed and carried out the first year's pilot test of DARCEE, and designed the 46 class test of DARCEE.

VITA

NAME Joseph F. Haenn

EDUCATION
1968 - Present Ph.D. Candidate in Measurement, Evaluation, and Statistical Analysis, University of Chicago, Chicago, Illinois (completion of all course work and examinations with the exception of the dissertation).
1968 - M.S. Educational Research - Bucknell University, Lewisburg, Pennsylvania
1966 - B.S. Health Education - East Stroudsburg State College, East Stroudsburg, Pennsylvania

EMPLOYMENT EXPERIENCE

1971-Present	Evaluation Specialist, National Program on Early Childhood Education, CEMREL, Inc.
1968-1971	Research Assistant, Graduate School of Education, University of Chicago (1/4 time).
1969-1970	Research Associate, Product Integration, Southwest Regional Laboratory for Educational Research and Development (summer full time).
1966-1968	Research Assistant, Bureau of Research Administration and Coordination, Department of Public Instruction, Commonwealth of Pennsylvania (full time).

PUBLICATIONS

Haenn, Joseph F. The effects of verbal instructions and corrections upon learning set formation in preschool children. Harrisburg, Pa. Bureau of Research Administration and Coordination, Department of Public Instruction, Commonwealth of Pennsylvania, June, 1968. Also in Master's Thesis, Bucknell University, 1968.

Haenn, Joseph F. Categorization methodology: applications and directions. Presented at meetings of the American Educational Research Association, New York, New York, February, 1971.

Haenn, Joseph F. The effects of procedural variation in free-sorting experimentation. Presented at meeting of the American Educational Research Association, Chicago, Illinois, April, 1972.

Haenn, Joseph F., Johnson, T. J., and Owoc, Paul. Tests and measurements for early childhood education programs. Paper presented at meetings of the American Educational Research Association, Chicago, Illinois, April, 1972.

Haenn, Joseph F., and Solomon, Warren H. NPECE Test for the Assessment of Basic Skills. (Preliminary Working Copy.) St. Louis, CEMREL, Inc., 1971.

In-house publications of Southwest Regional Laboratory for Educational Research and Development, Inglewood, California:

Haenn, Joseph F. TN 5-70-17 Summary of final test performance from the Spring, 1970, tryout of the SWRL Instructional Concepts Program (September 3, 1970).

Haenn, Joseph F. TN-5-70-23 CORREL (A computer correlation program documentation, August 27, 1970).

Haenn, Joseph F. TN-5-70-29 Summary of program pacing, criterion exercise and final test performance for the 1969-70 ICP tryouts, September 4, 1970, (with Nancy Yamen).

Haenn, Joseph F. TN-5-70-31 A comparison of performance of the Spring, 1970 and Fall, 1969 tryouts of the SWRL Instructional Concepts Program, (September 1, 1970).

Staff Allocation

Following are tables showing the man-day work allocation to each product series for the periods of December 1, 1973 through November 30, 1974 and December 1, 1974 through September 30, 1975. Included in these tables are the staffs from both the Syracuse-based staff and the St. Louis-based staff.

Man Loading by Product Series for Work for FY '74

Personnel	1	2	3	4	5	6	7	8	9	10	11	12	13
T. Johnson	0	0	0	5	3	0	0	0	1	0	0	0	0
D. Ferritor	.25	.25	.25	1	1	.25	0	0	0	0	0	0	0
W. Solomon	.5	.5	.5	2	0	1.5	.5	1	0	0	.5	.5	1.5
E. Myers	0	.5	0	.5	0	2	0	0	0	0	0	0	0
J. Haenn	0	0	0	3.5	0	0	.25	1.5	3	.25	0	.5	0
Graphics	3	2	0	0	0	0	0	0	0	0	1	0	3
Technical Writer	1	1	1	.5	0	0	0	0	0	0	0	0	1
Research Assistant	0	0	0	5	0	0	1.5	1.5	2	1	1	3	1
Secretarial	2.5	1	2.5	2	1	0	.5	1	2	1	1	1	2.5
Work Management	.3	.3	.3	1	2.5	2.5	.3	.3	.3	.3	.3	.3	.3
Subcontractor	4	1	2.5	.5	.5	6	.25	.5	.5	.25	1	.5	5

Man Loading by Product Series for Work for FY '75

Personnel	1	2	3	4	5	6
T. Johnson	0	0	0	6	3	0
W. Solomon	.5	.5	.5	4.5	1	1.5
J. Haenn	0	0	0	7	3	0
Graphics	2	1	2	0	0	0
Technical Writer	1	.5	1	1	.5	0
Research Assistant	1	0	1	3	1	2.5
Secretarial	4	k	4	3	2	0
Administration	.25	.25	.25	1	2.5	2.5
Subcontractor	4	k	2,5	k	k	8

G. MANAGEMENT PLAN

Following is a listing of the tasks needed to complete the final development of the Responsive Care Program. These tasks are ordered by product series for the period from the present time to September 30, 1975. It should again be noted that the only tasks for which we are requesting funds are the tasks from December 1, 1973 through May 31, 1974. In general, these tasks were abstracted from the *Resource Allocation and Management Plan* submitted to the National Institute of Education on March 1, 1973.

Task	Begin Date	End Date
Product Series 1--Responsive Care: Teacher's Guide		
Plans for Teacher's Guide	3/1/73	3/30/73
Draft of Teacher's Guide	3/30/73	6/30/73
Plan revisions of Teachers Guide	1/1/74	1/31/74
Revise Teacher's Guide	2/1/74	7/15/74
Complete revisions of Teacher's Guide	8/1/74	9/1/74
(Optional) Revision of Teacher's Guide	1/16/75	6/15/75
(Optional) Complete revision of Teacher's Guide	7/1/75	8/15/75
Product Series 2--Responsive Care: Materials		
Draft Administrator's Material	3/1/73	5/15/73
Draft Material Needs Section for Administrator's Handbook	3/1/73	5/15/73
Draft PR Brochure	3/1/73	5/15/73
Plan revisions of Administrator's Handbook*	1/1/74	1/31/74
Revise Administrator's Materials	2/1/74	7/15/74
Complete Administrator's Materials*	8/1/74	9/1/75
(Optional) Revision of Administrator's Materials	1/16/75	6/15/75
(Optional) Complete Administrator's Materials	7/1/75	8/15/75
Product Series 3--Guide for Trainers of Responsive Care Teachers		
Outline Guide for Trainers*	12/1/72	2/28/73
Draft Guide for Trainers*	3/1/73	9/15/73
Plan revision of Guide for Trainers*	1/1/74	1/31/74
Revise Guide for Trainers	2/1/74	7/15/74
Complete Guide for Trainers*	8/1/74	9/1/74
(Optional) Revision of Guide for Trainers	1/16/75	6/15/75
(Optional) Complete Guide for Trainers	7/1/75	8/15/75
Product Series 4--Responsive Care Evaluation Report		
Plan evaluation design	3/1/73	8/15/73
Evaluate preservice training	9/1/73	10/1/73
Collect pretest data (phase 1)	9/1/73	10/15/73

Note: *Work largely performed by the Syracuse-based staff.

Task	Begin Date	End Date
Product Series 4 (continued)		
Collect program implementation data	9/1/73	11/30/73
Collect non-participant observation data	9/1/73	11/30/73
Continue collecting observation and implementation data	12/1/73	5/31/73
Collect posttest data (phase I)	5/1/74	5/31/74
Analyze evaluation data (phase I)	6/1/74	6/15/74
Report on evaluation results (phase II)	6/1/74	6/30/74
Collect pretest data (phase II)	9/1/74	9/30/74
Collect program implementation data	9/1/74	5/31/75
Collect posttest data (phase II)	5/1/75	5/31/75
Data analysis (phase II)	5/1/75	8/15/75
Final evaluation report (phase II)	5/1/75	8/15/75
Product Series 5--Responsive Care Review and Reporting		
Constitute Review Panel	3/1/73	5/1/73
Milestone 1 review	8/15/73	8/30/73
Milestone 2 review	12/15/73	12/30/73
Milestone 3 review	7/15/74	7/30/74
Milestone 4 review	8/15/74	8/30/74
Milestone 5 review	6/15/75	6/30/75
Milestone 6 review	8/15/75	8/30/75
Additional reporting requirements		
Product Series 6--Responsive Care Tasks not Assigned to a Specific Product		
Report on site selection for pilot test	12/1/72	2/28/72
Plan parent involvement component*	12/1/72	2/28/72
Operate development site*	12/1/72	2/28/72
Draft parent involvement materials	3/1/73	6/1/73
Select pilot test sites	3/1/73	4/15/73
Conduct training program for directors	6/1/73	9/31/73
Conduct preservice teacher training*	8/1/73	10/15/73
Conduct onsite visits and inservice training*	9/1/73	6/15/74
Report on onsite visits and inservice training*	9/1/73	6/15/74
Plan for material revision	1/1/74	1/15/74

Task	Begin Date	End Date
Product Series 6 (continued)		
Negotiate 2nd year test sites (if required)	1/1/74	3/15/74
Conduct preservice training*	8/1/74	8/31/74
Conduct observation feedback*	9/1/74	5/31/75
Plan revisions of program materials	9/1/74	1/15/75
Carry materials through pre-publication phase	9/15/74	9/30/74
Product Series 7--Record Keeping System on Materials Use		
Develop and field test Record Keeping System	3/1/73	6/15/73
Report on reliability of Record Keeping System	6/15/73	8/1/73
Revise Record Keeping System	6/15/73	8/31/73
Field test Record Keeping System	9/1/73	4/30/74
Plan revisions of Record Keeping System	5/1/74	5/15/74
Revise Record Keeping System	5/18/74	8/15/74
Product Series 8--Responsive Teaching Assessment Instrument		
Develop and field test Responsive Teaching Assessment Instrument	3/1/73	6/15/73
Report on reliability of Responsive Teaching Assessment Instrument	6/15/73	8/1/73
Field test Responsive Teaching Assessment Instrument	9/1/73	4/30/74
Plan revisions of Responsive Teaching Assessment Instrument	5/1/74	5/15/74
Revise Responsive Teaching Assessment Instrument	5/16/74	8/15/74
Revise Responsive Teaching Assessment Instrument	6/15/73	8/31/73
Product Series 9--Child Outcome Measures		
Select child outcome cognitive measures	3/1/73	5/15/73
Analysis of cognitive child outcome measures*	5/16/73	6/15/73
Analysis of selected attitude measures*	3/1/73	5/1/75

Task	Begin Date	End Date
Product Series 9 (continued)		
Pilot test child outcome (cognitive and attitude) measures	5/16/73	6/15/73
Draft Repertoire Assessment Instrument	3/1/73	5/1/73
Pilot test Repertoire Assessment Instrument	5/2/73	6/15/73
Plan revisions of Repertoire Assessment Instrument	6/16/73	8/30/73
Revise Repertoire Assessment Instrument	7/1/73	8/30/73
Pilot test Repertoire Assessment Instrument	9/1/73	6/15/74
Plan revisions of Repertoire Assessment Instrument	6/15/74	6/30/74
Revise Repertoire Assessment Instrument	7/1/74	8/30/74
Product Series 10--Test of Responsive Care Principles		
Draft Test of Responsive Care Principles	3/1/73	5/15/73
Pilot and plan revisions of Test of Responsive Care Principles	10/15/73	11/31/73
Revise Test of Responsive Care Principles	1/15/74	2/28/74
Product Series 11--Repertoire Assessment Records		
Draft Repertoire Assessment Records	3/1/73	6/1/73
Pilot test at Syracuse and revise Repertoire Assessment Records	6/2/73	8/30/73
Pilot test in other sites and plan revisions of Repertoire Assessment Records	9/1/73	6/30/74
Revise Repertoire Assessment Records	7/1/74	8/30/74
Product Series 12--Responsive Care Program Implementation Instrument		
Develop and field test Responsive Care Program Implementation Instrument	3/1/73	6/15/73
Report on reliability of Responsive Care Program Implementation Instrument	5/15/73	8/1/73

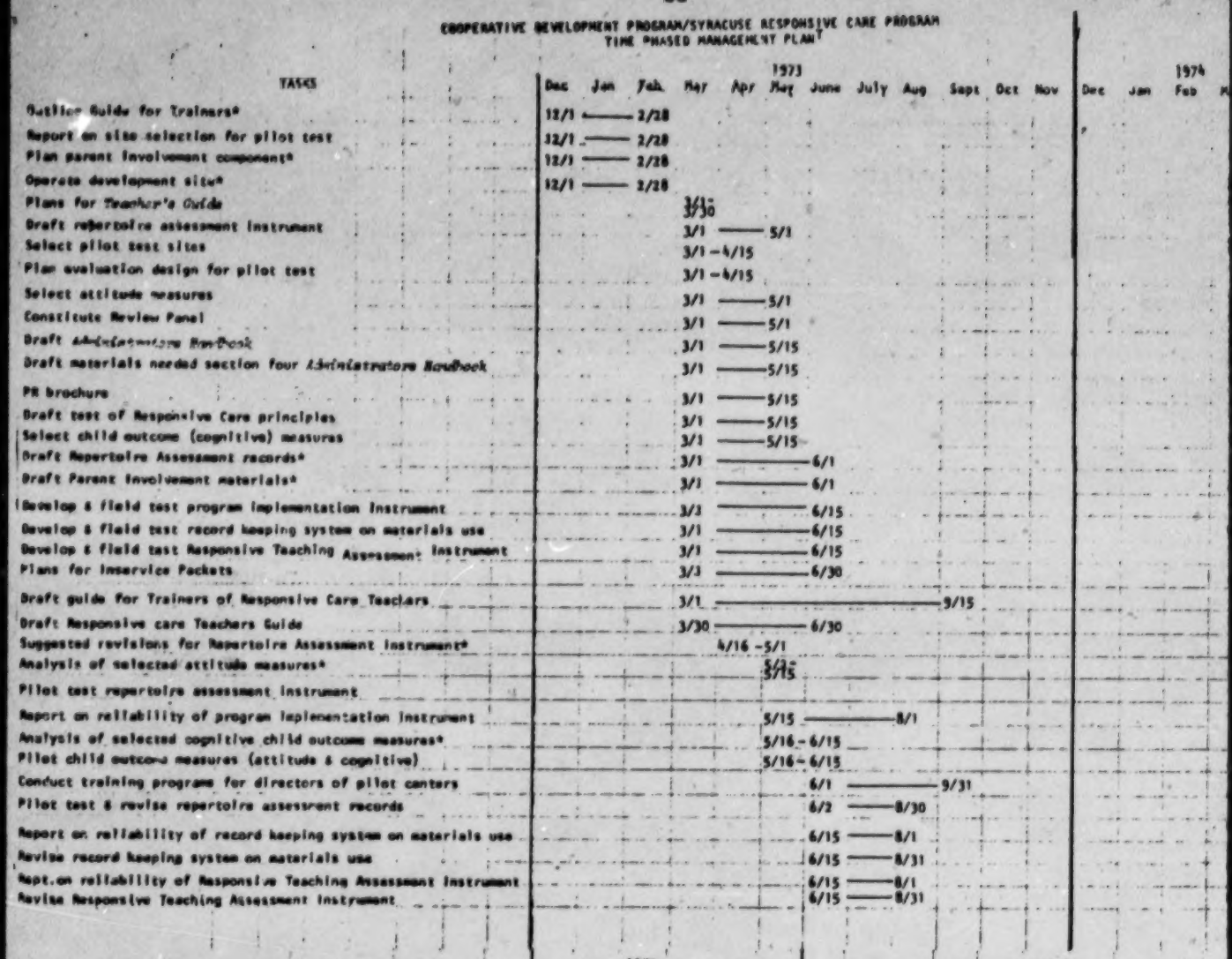
Task	Begin Date	End Date
Product Series 12 (continued)		
Field test Responsive Care Program Implementation Instrument in pilot sites	9/1/73	4/30/74
Plan revisions of Responsive Care Program Implementation Instrument	5/1/74	5/15/74
Revise Responsive Care Program Implementation Instrument	5/16/74	8/15/74
Revise Responsive Care Program Implementation Instrument	6/15/73	8/31/73
Product Series 13--Inservice Packets		
Plans for Inservice Packets	3/1/73	6/30/73
Draft and pilot test Inservice Packets	7/1/73	2/28/74
Plan revisions of Inservice Packets	1/1/74	1/31/74
Revise Inservice Packets	2/1/74	7/15/74
Complete revisions of Inservice Packets	8/1/74	9/1/74
(Optional) Revision of Inservice Packets	1/16/75	6/15/75
(Optional) Complete Inservice Packets	7/1/75	8/15/75

Time Phased Work Plan

The attached work plan shows in detail the activities which will have been completed by November 30, 1973 and the tasks proposed for the period of December 1, 1973 through September 30, 1975.

During the twenty-two months for which the funds will be requested, there will be six milestone decisions: (1) December 30, 1973; (2) June 30, 1974; (3) August 30, 1974; (4) June 30, 1975; (5) August 30, 1975; and (6) September 30, 1975. At the time of these decisions, a determination will be made whether the preliminary results from the pilot tests suggest that the materials can be released to commercial publishers at a future date with only the planned revision cycle or whether major revisions will be needed.

COOPERATIVE DEVELOPMENT PROGRAM/SYRACUSE RESPONSIVE CARE PROGRAM
TIME PHASED MANAGEMENT PLAN


TASKS
1973
Dec Jan Feb Mar Apr May June July Aug Sept Oct Nov
1974
Dec Jan Feb
Outline Guide for Trainers*
Report on site selection for pilot test
Plan parent involvement component*
Operate development site*
Plans for Teacher's Guide
Draft repertoire assessment instrument
Select pilot test sites
Plan evaluation design for pilot test
Select attitude measures
Constitute Review Panel
Draft Administrators Handbook
Draft materials needed section four Administrators Handbook
PR brochure
Draft test of Responsive Care principles
Select child outcome (cognitive) measures
Draft Repertoire Assessment records*
Draft Parent involvement materials*
Develop & field test program implementation instrument
Develop & field test record keeping system on materials use
Develop & field test Responsive Teaching Assessment Instrument
Plans for Inservice Packets
Draft guide for Trainers of Responsive Care Teachers
Draft Responsive care Teachers Guide
Suggested revisions for Repertoire Assessment Instrument*
Analysis of selected attitude measures*
Pilot test repertoire assessment instrument
Report on reliability of program implementation instrument
Analysis of selected cognitive child outcome measures*
Pilot child outcome measures (attitude & cognitive)
Conduct training programs for directors of pilot centers
Pilot test & revise repertoire assessment records
Report on reliability of record keeping system on materials use
Revise record keeping system on materials use
Rept.on reliability of Responsive Teaching Assessment Instrument
Revise Responsive Teaching Assessment Instrument
1973
June July Aug Sept Oct Nov Dec Jan Feb Mar Apr May
1974
June July Aug Sep
Plan Revision of Repertoire Assessment Instrument
Revise Case Program Implementation Instrument in pilot sites
Revise Repertoire Assessment Instrument
Draft & pilot test Inservice Packets
Conduct perservice teacher training*
Conduct Milestone 1 Review
Evaluate perservice training for pilot test teachers
Collect pre test data (phase 1)
Collect program implementation data
Conduct on site visits & inservice training*
Collect non-participant observation data
Report on on-site visits & inservice training
Field test record keeping system on materials use
Field test Responsive Teaching Assessment Instrument
Field test Responsive Care Prog. Impl.Instrument in pilot sites
Pilot test Repertoire Assessment Instrument
Pilot test in other sites & plan rev.of Rep.Assessment Records
Pilot & plan revisions of Test of Responsive Care principles

COOPERATIVE DEVELOPMENT PROGRAM/SYRACUSE RESPONSIVE CARE PROGRAM
TIME PHASED MANAGEMENT PLAN[T]

TASKS	1974 Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	1975 Dec	Jan	Feb	Mar	Apr
pilot test observation and implementation data	12/1	—	—	—	—	5/31											
ilestone 2 review	3/15-3/30																
revision of program materials*		1/15															
sions of Teacher's Guide*		1/31															
sions of Administrators Handbook*		1/31															
sions of Guide for Trainers*		1/31															
sions of Inservice Packets		1/31															
st of Responsive Care principles		1/15	—2/28														
2nd year pilot test sites (if required)		1/1	—	3/15													
nservice Packets			2/1	—	—	—	—	7/15									
achers Guide			2/1	—	—	—	—	7/15									
ministrators Handbook			2/1	—	—	—	—	7/15									
e Guide for Trainers			2/1	—	—	—	—	7/15									
sions of record keeping system on materials use						5/1-5/15											
sions of Responsive Teaching Assessment Instrument						5/1-5/15											
sions of Responsive Care Program Impl. Instrument						5/1-5/15											
cord keeping system on materials use						5/16	—	—	8/15								
sponsive Teaching Assessment Instrument						5/16	—	—	8/15								
sponsive Care Program Implementation Instrument						5/16	—	—	8/15								
ost-test data (phase I)						5/31											
valuation data (phase I)							6/1-6/15										
evaluation results (phase I)							6/1-6/30										
sions of Repertoire Assessment Instrument							6/16-6/30										
pertoire Assessment Instrument								7/1	—8/30								
pertoire Assessment Records								7/1	—8/30								
ilestone 3 review								8/15-									
reservice training*									8/1-8/31								
revisions of Inservice Packets									8/1	—9/1							
revisions of Teacher's Guide*									8/1	—9/1							
Administrators Handbook*									8/1	—9/1							
Guide for Trainers*									8/1	—9/1							
ilestone 4 Review									8/15-8/30								
retest data (phase II)										9/1-9/30							
sions of program materials														1/15			

TASKS	1974 Sept	Oct	Nov	1975 Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
bservation/Feedback training sessions*	9/1	—	—	—	—	—	—	—	5/31							
rogram implementation data	9/1	—	—	—	—	—	—	—	5/31							
erials through pre-publication phase	9/15-9/30															
) revision of Teacher's Guide					1/16	—	—	—	—	6/15						
) revision of Administrators Handbook					1/16	—	—	—	—	6/15						
) revision of The Guide for Trainers					1/16	—	—	—	—	6/15						
) revision of Inservice Packets					1/16	—	—	—	—	6/15						
osttest data (phase II)									5/31							
ysis (phase II)									5/1	—	—	8/15				
luation report (phases I & II)									5/1	—	—	8/15				
ilestone 5 review										6/15-6/30						
) complete revisions of Teacher's Guide											7/1	—8/15				
) complete revisions of Administrators Handbook											7/1	—8/15				
) complete revisions of A Guide for Trainers											7/1	—8/15				
) complete revisions of Inservice Packets											7/1	—8/15				
ilestone 6 review												8/15-8/30				

H. BUDGET
FORM II

Estimated Cost of Program and Components, by Fiscal Year and Source of Funds

Program Title: Syracuse Responsive Care Program Institution Name: CEMREL, Inc.

Program, Component and Source of Funds	Investment FY 71	Investment FY 72	Investment FY 73	Investment FY 74	Investment FY 75	Investment FY 76
Program						
Total	100,000	120,000	246,138	318,816	240,411	----
OE/NIE Basic Contract, total	100,000	120,000	246,138	318,816	240,411	----
Direct	100,000	104,000	215,356	268,084	195,656	----
Center Management	----	----	----	----	----	----
Indirect	----	16,000	30,782	50,732	44,755	----
Other Funds, total						
Other Federal						
Non-Federal						
University cost sharing						
Components 1/						
Component X						
OE/NIE Basic Contract						
Other funds						
Component Y						
OE/NIE Basic Contract						
Other funds						
Component Z						
OE/NIE Basic Contract						
Other funds						

1/ Provide data for all program units with a FY '74 NIE cost of $100,000 or more. If all Components are at this level, total costs should equal the sum of all Component costs.